



Dairy Grazing Farms Financial Summary:

Regional/Multi-State
Interpretation of Small Farm Data

First Year Report
2000

Funded by USDA Integrated Food and
Agricultural Systems Grant #00-52501-9708

May 2002

Acknowledgements

This project and publication were funded by the USDA Integrated Food and Agricultural Systems Grant #00-52501-9708 titled Regional Multi-State Interpretation of Small Farm Financial Data. This material is also based upon work supported by Smith Lever funds from the Cooperative State Research, Education and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.

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The idea for this project came from discussions among the Great Lakes Grazing Network (GLGN). The GLGN is a coalition of farmers, researchers/extension, Natural Resources Conservation Service Agency staff, environmentalists and others (including several of the authors) organized locally in the Great Lakes region states and provinces to support and promote managed grazing systems for livestock production. The focus is on systems that are practical and profitable for farmers and that protect and improve the environment. The long-term benefit of management intensive grazing (MIRG) will be to reduce livestock agriculture's negative impacts on water quality in the Great Lakes Basin and on other watersheds in the Great Lakes Region.

Organized by the Wisconsin Rural Development Center (WRDC) and coordinated by River Country Resource and Development Council, the network is a collaborative effort of working groups from Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Ontario, Pennsylvania, and Wisconsin. Representatives of each group coordinate a variety of grazing-based activities. They share research, education, training, policy, and outreach efforts, as well as develop policies supportive of grazing-based farming systems within the Great Lakes Region.

Two states not touching a Great Lake (Iowa and Missouri) are cooperating in this financial summary project as well. Data from additional states with similar climatic conditions has also been used.

The authors thank the farm families who have shared their data with this project. The authors also thank co-workers and others who have helped in promoting the project and, in some cases, collecting data.

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Regional Multi-State Interpretation of Small Farm Financial Data First Year Report on 2000 Great Lakes Grazing Network Grazing Dairy Data. ¹

III. Executive Summary

Management Intensive Rotational Grazing (MIRG) has become a more common dairy system in the northern U. S. This analysis of actual farm financial data from ninety-two graziers in the Great Lakes region provides some insight into the economics of grazing as a dairy system in the northern U.S.

These insights include:

- A comparison of the most profitable half with the least profitable half shows that while many graziers are very successful economically, some are not.
- The average grazing herd with less than 100 cows had a higher Net Farm Income From Operations (NFIFO) per cow and per Hundred Weight Equivalent (CWT EQ) than the average grazing herd with more than 100 cows.
- The average grazer in the study that is fully seasonal (stops milking at least one day each year), has a less desirable financial performance than the average non-seasonal herd, whether NFIFO/cow, NFIFO/CWT EQ or total NFIFO is used as the yardstick.

The study also confirms that accounting methodology and financial standards are important both in the accuracy and the standardization of comparison values across large geographic areas involving different combinations of production assets and management skills.

Cost of production values from the graziers in the report are presented on a whole farm, per cow and per CWT EQ basis for you to use to compare with your costs. To more accurately compare your performance with anyone else, it is recommended that you also calculate your cost of production using the per hundredweight equivalent of milk sold (CWT EQ) method. ² In this report, the cost of production is also calculated on an actual CWT sold basis.

Calculating your cost of production using the per CWT EQ method can be done by inputting farm data into AgFA©. See Appendix One for more information about using AgFA©. Appendix Two has a worksheet that also can be used to calculate your cost of production using the per hundredweight equivalent of milk sold method.

IV. Introduction

Aided by a USDA Integrated Food and Agricultural Systems grant, ten states and one province have standardized data handling and analysis procedures and combined actual farm financial and a more limited amount of production data to provide financial benchmarks to help farm families and their communities be successful and sustainable.

¹ Tom Kriegl from the U.W. Center for Dairy Profitability is the lead author of this report. You may contact him at (608) 263-2685, via e-mail at tskriegl@facstaff.wisc.edu or by writing the UW Center for Dairy Profitability, 277 Animal Science Bldg., 1675 Observatory Drive, Madison, WI 53706. This report is the first year report of the Regional Multi-State Interpretation of Small Farm Financial Data USDA IFAS grant project. See Appendix Three for coauthor contact information.

² CWT EQ sold is an indexing procedure which focuses on the primary product that is sold and standardizes farms in terms of milk price and other variables for analysis purposes. For more information about the CWT EQ method, consult *Cost of Production Versus Cost of Production*, Dr. Gary Frank, UW Center for Dairy Profitability, 1997.

The first enterprise analyzed in this project is dairy grazing. To be considered a dairy farm for the study, 85% or more of gross income must be from milk sales or 90% of gross income must typically be from dairy livestock sales plus milk sales. To be considered a grazer for the study, one must harvest over 30 % of grazing season forage needs by grazing and must provide fresh pasture at least once every three days.

Standardization of data handling and analysis procedures relied heavily on the Farm Financial Standards Guidelines (revised December, 1997). The guidelines were developed to serve several needs which include: (1) promoting uniformity in financial reporting for agricultural producers by presenting methods for financial reporting which are theoretically correct and technically sound (2) presenting standardized definitions and methods for calculating financial measures which may be used in the measurement of financial performance of agricultural producers, and (3) identifying alternatives for development of a national agricultural financial database.^{3 4}

A relatively new computer program called Agricultural Financial Advisor (AgFA©) is used to analyze the data. See Appendix One for more information about using AgFA©.

This first year report replaces the preliminary report presented at the Great Lakes Grazing Conference, in Battle Creek, Michigan on February 10-11, 2002 for three reasons.

One reason is that fifty-nine more data sets have been added.

A second reason is that the analysis in this report uses the historic cost valuation method to value assets instead of the current market valuation method used in the preliminary report. While commonly used, the current market valuation method of assets allows paper changes in assets to go up and down independent of the operational efficiency of the farm business, providing an inaccurate picture of the operating profitability of the farm business. Measures of operating profit are not distorted by changes in asset unit values when using the historic cost asset valuation format. While the major conclusions in the first year preliminary report are valid, the magnitude of the numbers has changed dramatically. The "all grazer" FIFO/Cow was about \$500.00 higher and the FIFO/CWT EQ was about \$2.25 higher in the preliminary financial report due mainly to the difference in the asset valuation method used.

Data was collected from a total of 121 grazing dairy farms for 2000. However, three of them were quite incomplete and another twenty-six provided asset values using only the current market method. The data from these twenty-six farms has been analyzed; however, because of the arbitrary variability added by the current market method, they are not included in the major calculations in this report. Thus, one of the valuable lessons reinforced by the first year report is that accounting methodology is important both in standardization and in the accuracy of financial comparisons of businesses.

A third reason that this first year report of the project totally replaces the preliminary report is that many additional financial comparisons are added. Each of the comparison groupings in this report has six to twelve pages of tables to show:

- The Farm Earnings report with the whole farm, per cow and per CWT EQ format.
- The Cost of Production report with the whole farm, per CWT Sold, and per CWT EQ formats.
- The Financial Measures Summary report.
- The Balance Sheet report.

There is a further intention to more closely relate these financial results with additional specific production practices in later reports. The Regional Multi-State Interpretation of Small Farm Financial Data Project is

³ *Financial Guidelines for Agricultural Producers: Recommendations of the Farm Financial Standards Council (FFSC)*, Revised December, 1997.

⁴ Since FFSG allows some latitude on some details, anyone wishing to exactly duplicate the project data handling procedures should contact the authors.

also actively seeking actual farm financial data from other dairy graziers and other enterprises such as organic dairy, custom heifer growers, and graziers of other livestock.⁵

Reports from New York and Wisconsin

Not all graziers are created equal; consequently, there may not be a typical grazer. However, it may still be instructive to have a more personal glimpse at a couple of grazing farms that are participating in this study. The two farms are similar in some ways and different in others. One difference is how they started grazing: the New York farm family started grazing and dairy farming simultaneously, while the Wisconsin family switched to grazing after four years of operating as a traditional confinement dairy farm. Among the most important characteristics that both families share is their success in and satisfaction from their decision to operate a grazing dairy farm. They are commended for sharing their stories with others.

The Sawyer Farm from New York⁶

Matt and Darcy Sawyer have been dairy farming together for eight years and have used intensive grazing since the beginning. They currently milk about seventy cows on their farm near Locke, New York.

Matt Sawyer started his dairy career as a milk inspector for Sunnysdale Farms in 1989. In 1991 Matt met Darcy, and they were married in 1992. Darcy was interested in starting a dairy farm, and within two months they started milking cows on a rented farm in Greene, New York. At this location they were milking about twenty-four cows in a tie stall/stanchion barn with a dump station. The Sawyers quickly decided that this was a lot of work for Darcy, especially with Matt's full-time job at Sunnysdale. By early 1993, they had sold the herd of cows and started looking for a new farm site.

In 1994, Matt and Darcy found the ideal site -- about seventeen acres in Cayuga County. After purchasing the land, they moved a mobile home onto the site and the two set to work building their own free stall barn with a home-made flat barn double 6 parlor. Soon after the barn was completed, Darcy gave birth to their son, Jesse.

As the herd continued to grow, Matt and Darcy built a new double 9 swing parlor in 1998. Matt also decided that he needed to spend more time on the farm and quit his job as a milk inspector in 1999. By 2000, the Sawyers were milking fifty cows on their new farm.

Grazing

The Sawyers started grazing to reduce labor requirements. The farm they had rented in Greene, New York had no silo, so all forage harvested had to be dry hay. Being short of help (Matt still had his full-time job) and having old equipment, they decided to turn the cows out after the first hay cutting. Although the pastures were large and the grasses native, the cows did relatively well. In fact, the only problem they encountered that first year was deer running through their pasture fences. The pasture system at this first location consisted of a few large paddocks divided with a single wire.

Since moving to their current location in 1994, the Sawyers have intensified their pasture management. Currently, the pasture is divided into several large subdivisions with the cows being given fresh grass each day. Water is provided to the cows in every paddock and the cows are supplemented with a TMR (consisting of corn silage, corn meal, and a protein supplement) as well as free choice dry hay. They keep track of pasture quality through daily visual assessment that is recorded in their feeding records. They are very satisfied with using pasture and feel that it is a key to their farm's profitability. As their farm has

⁵ If you would like to participate in the study, refer to appendix three for contact information for your local state or provincial representative.

⁶ This case farm report has been excerpted from *Dairy Farms Business Summary: Intensive Grazing Farms New York 2000*. (Ithaca: Department of Applied Economics and Management, College of Agriculture and Life Sciences, Cornell University, 2001)

expanded, they have needed to alter their pasture management to meet the herd's needs while maintaining high quality forage. However, grazing will certainly be a part of the farm's future.

Management Style

Matt and Darcy's mission is to provide a reasonable living for their family by doing what they enjoy most, which is farming. They characterize their management style as medium production with low input cost, which includes a very low debt-load. The Sawyers rent most of their land and only own equipment that they use frequently, making use of custom operators for hay and corn harvesting.

Extensive record keeping has allowed the Sawyers to track their progress and make good management decisions. Keeping milk income over feed cost as high as possible is one of their main goals. To achieve this goal, Matt and Darcy record daily milk production and feeding information to calculate their feed costs per hundredweight on a monthly basis. When faced with a management decision, they refer to their records and decide what changes will result in the highest margin possible between milk income and feed costs. While the Sawyers do not find record keeping as one of the most enjoyable aspects of farming, they have found it necessary to make good management decisions.

Future Plans

Matt and Darcy are very happy with the way things have progressed. Currently, they are striving to make their herd seasonal. Not only will this provide some time off during the winter, but it will allow them to manage the cows and calves more efficiently. As of 2001, they have expanded the herd up to 70 cows and plan to stay at this size for the foreseeable future. Matt says, "We credit our success to God's blessing on our efforts."

The Eder Farm from Wisconsin⁷

They have nearly tripled the size of their herd and their annual milk production without adding any labor and without adding new buildings or feed storage. On top of that, they are making a lot more money. Moreover, they have more time for family activities. It may sound impossible, but the impossible became possible for Robert and Barbara Eder of Weyauwega, WI, when they started grazing their herd seven months of the year.

Robert, who was raised on a Wisconsin dairy farm, moved to Arizona after high school and worked as a carpenter. However, when he and Barb married and started a family, they decided to return to the home farm where they worked for his uncle for seven years.

The Eders were in their mid-30s when they rented their own farm in January 1988 and later purchased it in 1990. With a good herd of forty to fifty Holsteins and conscientious care, they were able to get the rolling herd average over 21,000 M within two years. Amazingly they were not showing much of a profit.

Then the Eders went to 3x milking in 1990. When they cut back to milking five times every two days late in 1991, their rolling herd average was over 26,000 M and one of the highest in the county. Early in 1992, they added ten stalls to their thirty-nine stall barn so they could grow to nearly sixty.

Still life was not what they wanted it to be: "We worked so hard. It was always a struggle to make ends meet," Eder said. "We were pretty well burned out," he continued. "We looked at each other and asked, 'Do we want to be doing this when we're 50 years old?' We were doing chores all day long, every day."

For the Eders, the conversion came when they attended a two-day grazing conference early in 1992. The conference was attended by seventy New Zealand dairy farmers who were touring the U.S. "They

⁷ Most of this case farm report has been excerpted with permission from the April 25, 1997 issue of *Hoard's Dairyman*. It has been updated from the previous version.

were successful men in their 50's," Eder pointed out. "They were wealthy, happy... [T]hey weren't burned out. And they were all graziers." "

Making the Switch

That night we knew that we were going to make a major change on the farm. Heifers went out on pasture in the spring of 1992. Cows were put on pasture in the Fall of that year. In November of 1992, the Eders traveled to New Zealand to see first-hand how rotational grazing works. By the spring of 1993, their rotational grazing system was up and running. In many years since, they have added more cows. Today, they are milking about 130 head 2x. Pounds of milk sold per cow have ranged from 16,818 to 20,520 during the last six years.

The Eders farm is forage self-sufficient for cows and young stock. All grain and protein are purchased. They have about 300 acres in permanent pasture; they also take one or two crops of hay silage from this ground. In addition, they raise sixty to seventy acres of corn silage each year.

All other forage harvesting is done by the herd. In a typical grazing season, heifers are put on pasture the second week of April and cows by the end of April. For two weeks, the milking herd still receives the winter totally mixed ration (TMR). For another two weeks, the forage is reduced in the TMR gradually until the cows are getting 20 pounds of grain and 5 pounds of corn silage per day (dry matter basis) to supplement the grazing—an 18-1/2 percent ration.

Cows are on pasture until late November, when they are back to being fed entirely at the bunk with a sixteen percent protein TMR.

The herd is bred for spring and fall calving, with about eighty percent of the herd calving in March, April, and May. The Eders are down to as few as forty cows in milk during February.

Although their switch to rotational grazing was sudden, it was not without thought. The Eders believed it would help eliminate three problems they faced with their "traditional" stall barn and confinement feeding system. "One, we wanted to produce high-quality forage but were unable to due to our shortage of labor and equipment, and we couldn't afford to increase either," Eder explained. "Second, we weren't able to use the silo unloader (we had only one hay silage silo) while filling during the harvest period. This led to a lot of hand labor. Third, we didn't like keeping cows in the barn all day, every day, so we let them outside. But we felt this 'dry out' handling of dairy cows was a waste of manure nutrients and not very hygienic."

The switch to rotational grazing brought many benefits. With cattle on pasture seven months of the year, the need for mechanically harvested and stored forage was cut by fifty percent. They no longer have to throw down hay silage by hand during the harvest season. Fieldwork was reduced by 75 percent.

For the winter months, the Eders fill one 20-by 60-foot silo with first-crop hay silage. They also fill some silage bags and make 100 to 200 round bales for heifers and dry cows.

Results

"We know, through forage analysis, that our cows are getting better-quality forage on pasture which reduces their grain requirements," Eder said. "Cows can harvest forage, even in the rain, at quality levels that are not practical with mechanical harvesting—shorter lengths and on a more frequent basis."

The switch to a rotational grazing system also eliminated the need for housing and the many chores associated with it. During grazing season, all cattle are kept outside. In winter, the milking herd is kept on a bedded pack in an open shed. Heifers are kept outside near a grove of trees.

The financial gains have been rewarding for the Eders. "When you are making money in farming, your whole outlook is different. You can wake up in the morning and feel good," Eder pointed out.

The first year in farming (1988), the Eders shipped 807,000 pounds of milk for the year. In 2000, they shipped 2,778,609 pounds. The labor it took to produce that milk was the same both years—the Eders plus one part-time employee. Labor efficiency is a key strength of the operation.

With cattle outside and harvesting their own forage most of the year, no new buildings or feed storage facilities have been needed.

The only major building project was to install a double-14 swing parlor (14 units in center of pit) in one wing of their existing stall barn. The actual parlor (concrete work, stalls, and milking units) cost \$15,000. Improvements to the building (insulation, new ceiling, new interior walls, new windows, making it a clear-span structure) cost \$35,000. Automatic takeoffs and a crowd gate were added later at a cost of \$14,000.

Even with this \$64,000 parlor project, the Eders were able to pay off a lot of short-term debt since switching to grazing, and they've been able to boost their net worth substantially. Eder is quick to emphasize that his rotational grazing system is not low cost when it comes to variable inputs. They have a good herd of cows, and they feed them well. "We spend \$75,000-\$95,000 in a typical year on feed," he said, adding that they purchase all grain, protein, mineral, and calf feed.

Philosophy

After a few years of grazing, the Eders were convinced that the switch to rotational grazing was a good fit for their farm and lifestyle. On a daily basis, they have more time to do things with their children. On an annual basis, they are able to take more—and longer—family vacations.

"Many dairy producers are making the jump to large, confinement dairies to get the financial advantages that go with it. We've achieved financial advantages without making that big jump," Eder concluded.

After only a few years of switching to grazing, the Eders shifted a significant amount of their attention to helping others in the dairy industry.

They have encouraged others to try grazing as active members of several farm organizations, including their local grazing network (which they helped start). As a producer-member of the American Grassland and Forage Council, Robert won the organization's national forage spokesperson contest in 2000 with his enthusiastic portrayal of what the grazing system has done for their farm, their family and for the environment.

They have mentored several aspiring graziers and are gracious hosts to anyone who visits their farm. They continue to be enthusiastic charter members of the Wisconsin Grazing Dairy Profitability Analysis, having provided seven years of financial data.

Recently the Eders have formed a cooperative with four other graziers to manufacture and market cheese from milk produced on pasture.

The following philosophy is excerpted from a presentation recently delivered by Robert.

I am concerned that the future of our dairy industry is at a crossroads. In my lifetime I have witnessed the erosion of dairying in my area from a thriving, vibrant and dominant component of the local economy to a few farms scattered across the township.

When a business fails, the rank and file is not held accountable; the blame falls on the leadership. So too in a very real way is what has befallen the dairy industry in Wisconsin. In the past we had visionary leaders in our industry and our industry needs leaders with a vision of the future, now.

I believe the future of dairying in Wisconsin has to include some of the patterns or the pieces that made it so prosperous in its heyday.

Those patterns include:

- Discussion groups of two, husband-wife teams that are the basic building blocks that our family farms and our communities stand on.
- Farms owned by the people that work them.
- Farms integrated into their communities so there is a harmony between rural and urban life.
- Farms where animals are part of the landscape.
- Farms where quality forage production and land stewardship are compatible.
- Farmers that have pride in and control over the finished products of their labor.
- Farmers working, sharing and caring with and for each other.
- A Wisconsin dairy industry that is clean, green and profitable.

As a board member I would work toward a "Rural Renaissance" in America's Dairyland.

VI. Impact of Valuation of Assets on the Interpretation of the Balance Sheet and on Many Financial Measures

Judgment must be exercised in determining the value of assets on any balance sheet. There is more than one appropriate way to value assets depending on one's objective. No single method is appropriate for all purposes. In fact, some purposes such as estate planning require two methods. Therefore, a balance sheet that makes provision for two or more valuation methods is needed to serve all purposes adequately. All purposes require an accurate inventory.

Parallel balance sheets are being used for this project. One track uses historic cost (HC) values of assets; the other track uses current market value (CMV). Each method has its pluses and minuses. A big advantage of the HC method is that measures of operating profit are not distorted by changes in asset unit values. Consequently, measures calculated by the HC method are the ones emphasized in this report. The current market value is more useful for such tasks as making decisions about insurance coverage and for estimating the size of your estate. The CMV will often enable you to persuade your lender to loan more money. Both methods (CMV and HC) are needed for estate planning, for planning a farm business transfer or arrangement, and for estimating the tax consequences of many major business decisions. Unfortunately, relying too heavily on CMV balance sheets fooled many farm families and their lenders into overestimating the financial health of many family farms in the 1960s, 70s and 80s. Overestimating the financial health contributed to many unfortunate decisions. The historic cost (HC) asset values are usually lower than the CMV.

The Rate of Return on Assets (ROROA) calculated with HC values will often be higher than the ROROA calculated with current market values. The HC based NFIFO values are usually lower than the NFIFO values based on CMV.

ROROA is one of the most comprehensive, useful and important measures of financial performance. However, because of its comprehensiveness it is not always calculated accurately or in the same way. When ROROA values from different sources are compared, it is important to verify how they were calculated. The HC asset valuation method is the standard method used to report profits of most businesses including Fortune 500 companies. The CMV asset valuation method is used to calculate the ROROA of mutual funds.

The AgFA© report titled Financial Measures is designed to calculate NFIFO and ROROA both ways (HC with tax depreciation and CMV of assets and economic depreciation). Again, the analysis in this report focuses on the financial measures using the HC approach because that approach prevents asset unit value changes from influencing the operational profits. The HC based NFIFO values from the financial measures report match the NFIFO values found on the farm earnings and cost of production reports.

On the AgFA© balance sheet, the HC values for non-current assets are on the right hand side. The CMV is in the middle and the net worth (or total equities) is calculated using market values. Notice the

calculated cost of liquidation (contingent liabilities). Near the bottom of the balance sheet, the change in CMV net worth is divided into three sources:

- Retained earnings: that is generated by operating the business
- Contributed capital: that the owner has contributed to the business
- Valuation adjustment: asset value appreciation or depreciation

From a business operational profit analysis point of view, it is preferred that much of the net worth increase comes from the retained earnings category.

VII. Contingent Liabilities (CMV only)

Because many farm assets are not in a liquid form, they are not readily available to pay bills, settle estates etc. There is often a cost connected to converting an asset to a more liquid form. These liquidation costs are often called contingent liabilities. AgFA© automatically makes the following calculations to estimate how much of your CMV track assets would be used up in liquidation. All assets but cash and prepaid expenses are charged 7% for sales expenses. The remaining value (or basis in the use of resale items) of all the other current assets are charged 28% for federal income tax. For non-current assets, the 7% sales expense is charged, then any basis is subtracted and the calculated taxable gain is reduced by the 20% capital gains tax rate. AgFA© then reports all contingent liabilities as a one lump sum non-current liability. It does this instead of subtracting the cost of liquidation from asset values. Contingent liabilities are calculated only on current market values. Contingent liabilities do not influence the AgFA© farm earnings statement. The AgFA© calculation for contingent liabilities assumes the full consequences of a total liquidation in one tax year.

VIII. Some Categories of Costs

Total costs include all cash and non-cash costs including the opportunity cost of unpaid labor, management and equity capital. The total cost concept is needed to determine the minimum revenue required to meet all long-run financial obligations of the business. All long-run financial obligations of the business include a satisfactory reward for the owners' unpaid labor, management and equity capital (opportunity costs). Traditionally, total cost is divided into fixed and variable costs and these traditional cost breakdowns are still valid. However, there are some difficulties associated with comparing the financial performance of farms of greatly differing size and type that are not adequately handled by these traditional measures. Therefore, other measures can also be useful.

Since many business owners are willing to work for less than the opportunity cost of their labor, management and equity, and because the inclusion of opportunity cost requires some assumptions, the allocated cost group becomes useful, too.

Total allocated cost equals total cost minus the opportunity cost of unpaid labor, management and capital supplied by the owning family. Allocated cost also equals total income minus NFIFO. NFIFO can be smaller, larger or equal to the combined opportunity cost of unpaid labor, management and capital supplied by the owning family. Since opportunity cost is not consciously calculated by everyone, allocated cost is often used by non-economists as a default proxy for total cost.

Total Basic cost is another useful measure. Basic costs are all the cash and non-cash costs except the opportunity costs and interest, depreciation, labor, and management. Livestock depreciation is included as a basic cost to reflect the depreciation costs associated with differing cull rates between systems. It is included with basic costs, because like all other basic cost items, it is greatly influenced by operational management decisions.

Some farms have only unpaid labor while others pay family members or non-family hired help. Basic cost is a useful measure for comparing one farm to another that differs by:

- the amount of paid versus unpaid labor,
- the amount of paid versus unpaid management,

- the amount of debt,
- the investment level,
- and/or the capital consumption claimed (depreciation).

Basic cost is very similar to the cost of goods concept that is commonly used by many non-farm businesses.

Since basic cost primarily includes variable expenses (those most affected by short run decisions), it comes close to determining the minimum amount of income needed per unit of production to continue producing in the short run.

A comprehensive evaluation of the cost of production of any business will examine several levels of cost including basic, allocated and total costs. All three of these cost categories are calculated on the AgFA® cost of production report. Appendix two also has a worksheet that can be used to calculate all three cost categories.

IX. Cost per Hundredweight Equivalent of Milk Sold (CWT EQ)

CWT EQ is an indexing procedure which focuses on the primary product that is sold and standardizes farms in terms of milk price and many other variables for analysis purposes.

Dairy farms have numerous sources of income: milk, cull cows, calves, CCC milk assessment refund, cooperative dividends, property tax credit on income taxes, crop-related government payments, etc. This large number of income sources makes using an equivalent unit essential. In addition, on most dairy farms, the cost of producing crops sold for cash cannot be separated from the cost of producing the crops fed to the dairy herd. The farm's total income (including cash sales of crops and changes in the value of feed and cattle inventories) must be included when calculating equivalent units.

The use of an equivalent unit is the most meaningful measure when calculating the cost of producing milk, because dairy farm businesses have multiple sources of income. The measure is calculated by summing the income from the sale of all products produced on the dairy farm and dividing by the price of milk.

For most analyses, the equivalent unit is Hundredweight of Milk Sales Equivalent (CWT EQ). The output measure for an individual farm is calculated with the following formula:

$$\frac{\text{Total Farm Income from all Sources}}{\text{Average Price Received per Hundredweight of Milk Sold by that Farm}}$$

However, when studying a group of farms or comparing farms that may be receiving different milk prices, all producers should use the same price. Therefore the formula should be:

$$\frac{\text{Total Farm Income from all Sources}}{\text{U.S. All Milk Price per Hundredweight (for the year in question)}} \\ \text{The U.S. All Milk Price per Hundredweight for 2000 is \$12.33.}$$

Note: If the income from non-dairy enterprises exceed 30 percent of total income, additional calculations to separate out the non-dairy enterprises' costs are required.

X. Comparing the Average Cost of Production of Ninety-two Graziers with Your Cost of Production

Table 1-1 summarizes selected numbers (mainly from tables 1-2 to 1-5) for ninety-two graziers.

Table 1-3 shows the average cost of production values from ninety-two graziers presenting values on a whole farm, per CWT sold and per CWT EQ basis. You can use the per CWT EQ columns to compare with your costs for every cost category. The farm earnings statement (table1-2) presents values on a whole farm, per cow and per CWT EQ basis. If your costs are greatly different, try to figure out why they are so different and then decide if it is something that could or should be changed.

Some differences could be caused by variations in data categorization. For example, an expense that might have been called marketing by you might have been included as “other farm expense” by the group. While much more interpretation remains, the data in this report may confirm some beliefs and may contradict others.

Benjamin Franklin said, “A penny saved is a penny earned.” This is as true today as it was in Franklin’s day, but how much difference does a penny make? If multiplied by a large enough number, a penny can amount to a lot. For example, a penny amounts to \$10,000 if multiplied by a million. A penny saved per 100 pounds of milk sold per average grazier in this analysis would add about \$115 of profit per year (assuming that no income was lost in the action taken to save the penny of cost). A penny added to the price per 100 pounds of milk sold would have the same effect (assuming that no expense increased in the action taken to earn an extra penny of income).

Not to dismiss Benjamin Franklin, it is obvious that to the average grazier in this analysis, it takes more than a few pennies per 100 pounds of milk sold to make a big difference in profitability. Still, enough pennies in enough places can add up to important differences.

XI. The Average Performance of Ninety-Two Grazing Dairy Farms from Many States

When the financial analysis is performed for the ninety-two grazing farms using the current market value of asset valuation method (CMV), the NFIFO increases from \$369 to \$529 NFIFO per Cow and from \$1.66 to \$2.38 due to changes in asset values. These CMV values are 43% higher than the HC values. A 43% difference is very large. This helps illustrate the fact that farm financial measures which are dependent on the CMV of assets are not very instructive for comparing the financial performance of one farm to another or for comparing the financial performance of one group to another. The measures of profitability calculated in the detailed cost of production and farm earnings reports in the tables, are calculated using the historic cost asset valuation method (HC) to provide a better measure of profit levels generated by operating the farm business. Any comparison between the measures in this report and data based on the CMV of assets will be misleading.

Table 1-1

Performance Measures Selected from Tables 1-2 to 1-5 Summarizing the Average Performance of 92 Grazing Dairy Farms From Many States		Average
Number of Herds		92
Number of Cows per Herd		90
Average Lbs. Milk per Cow		16,836
Average Lbs. Milk per Herd		1,511,264
Average Basic Cost per CWT EQ		\$7.83
Allocated Cost per CWT EQ		\$10.67
Allocated Minus Basic Cost per CWT EQ		\$2.84
NFIFO per Cow		\$395
NFIFO per CWT EQ		\$1.66
NFIFO per Farm		\$33,098
NFIFO per CWT EQ (without deducting any labor compensation)		\$2.60

NFIFO (without deducting any labor compensation) is not a common measure. It is used in this project because some comparisons are made between farms that rely mainly on hired labor and farms that rely entirely on unpaid labor. In such cases, this uncommon measure provides additional insight to the comparisons.

See the following tables (1-2 to 1-5) for more details about the average performance of the ninety-two graziers.



Table 1-2, p. 1

The Average AgFa© Farm Earnings Report for 92 Great Lakes Graziers

Income	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	0.00	0.00	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	198,663.32	2,213.12	9.96
Raised Non-Breeding Livestock Sales	5,341.42	59.50	0.27
Crop Sales	881.28	9.82	0.04
Distributions Received from Cooperatives	426.68	4.75	0.02
Agricultural Program Payments	17,489.57	194.83	0.88
Custom Hire (Machine Work) Income	1,616.80	18.01	0.08
Other Income, Incl. Tax Credits, Refunds	3,845.07	42.83	0.19
Basis in Breeding Livestock Sold	(169.02)	(1.88)	(0.01)
Sale of Raised Breeding Livestock	11,814.30	131.61	0.59
Total Cash Income - Basis Adjustments	239,909.42	2,672.60	2.03
Non-Cash Income			
Change in Raised Crop Inventories	1,471.67	16.39	0.07
Change in Remaining Current Assets	295.92	3.30	0.01
Change in Raised Breeding Livestock	4,208.24	46.88	0.21
Total Non-Cash Income	5,975.83	66.57	0.30
Total Income	245,885.25	2,739.17	12.33



Table 1-2, p. 2

The Average AgFa© Farm Earnings Report for 92 Great Lakes Graziers

Expenses	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Cost of Items for Resale	0.00	0.00	0.00
Breeding Fees	2,571.78	28.65	0.13
Car and Truck Expenses	294.89	3.29	0.01
Chemicals	2,181.99	24.31	0.11
Custom Hire (Machine Work)	6,150.75	68.52	0.31
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	766.76	8.54	0.04
Feed Purchase	53,994.82	601.50	2.71
Fertilizer and Lime	4,436.38	49.42	0.22
Freight and Trucking	1,052.11	11.72	0.05
Gasoline, Fuel, and Oil	5,880.34	65.51	0.29
Farm Insurance	3,846.27	42.85	0.19
Mortgage Interest	10,742.01	119.67	0.54
Other Interest	2,544.86	28.35	0.13
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	17,954.46	200.01	0.90
Rent/Lease Equipment	484.46	5.40	0.02
Rent/Lease Other	5,485.05	61.10	0.28
Repairs and Maintenance	16,519.15	184.02	0.83
Seeds and Plants Purchased	2,330.57	25.96	0.12
Supplies Purchased	6,464.73	72.02	0.32
Taxes - Other	5,481.43	61.06	0.27
Taxes - Payroll	27.49	0.31	0.00
Utilities	6,478.97	72.18	0.32
Veterinary Fees and Medicine	5,571.21	62.06	0.28
Other Farm Expenses	4,835.55	53.87	0.24
Marketing & Hedging	10,571.54	117.77	0.53
Other Crop Expenses	88.90	0.99	0.00
Other Livestock Expenses	8,001.23	89.13	0.40
Total Cash Expense	184,757.70	2,058.21	9.26
Non-Cash Expenses			
Change in Prepaid Expenses	2,139.55	23.83	0.11
Change in Accounts Payable	1,306.12	14.55	0.07
Machinery, Equipment and Building Depreciation	24,553.76	273.53	1.23
Livestock Depreciation	30.43	0.34	0.00
Total Non-Cash Expenses	28,029.87	312.25	1.41
Total Expenses	212,787.57	2,370.46	10.67
Net Farm Income From Operations (NFIFO)	33,097.69	368.71	1.66
Gain (Loss) on Sale of All Farm Capital Assets	2,427.35	27.04	0.12
Net Farm Income (NFI)	35,525.04	395.75	1.78



Table 1-3, p. 1

The Average AgFa© Cost of Production Report for 92 Great Lakes Graziers. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

Income	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income	245,885.25	16.27	12.33
Expenses	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost			
Breeding Fees	2,571.78	0.17	0.13
Car and Truck Expenses	294.89	0.02	0.01
Chemicals	2,181.99	0.14	0.11
Custom Hire (Machine Work)	6,150.75	0.41	0.31
Feed Purchase	53,994.82	3.57	2.71
Fertilizer and Lime	4,436.38	0.29	0.22
Freight and Trucking	1,052.11	0.07	0.05
Gasoline, Fuel, and Oil	5,880.34	0.39	0.29
Farm Insurance	3,846.27	0.25	0.19
Marketing & Hedging	10,571.54	0.70	0.53
Rent/Lease Equipment	484.46	0.03	0.02
Rent/Lease Other	5,485.05	0.36	0.28
Repairs and Maintenance	16,519.15	1.09	0.83
Seeds and Plants Purchased	2,330.57	0.15	0.12
Supplies Purchased	6,464.73	0.43	0.32
Taxes - Other	5,481.43	0.36	0.27
Utilities	6,478.97	0.43	0.32
Veterinary Fees and Medicine	5,571.21	0.37	0.28
Other Crop Expenses	88.90	0.01	0.00
Other Livestock Expenses	8,001.23	0.53	0.40
Other Farm Expenses	4,835.55	0.32	0.24
Change in Prepaid Expenses	2,139.55	0.14	0.11
Change in Accounts Payable	1,306.12	0.09	0.07
Cost of Items for Resale	0.00	0.00	0.00
Taxes - Payroll	27.49	0.00	0.00
Depreciation on Purchased Breeding Livestock	30.43	0.00	0.00
Total Basic Cost	156,225.72	10.34	7.83



Table 1-3, p. 2

The Average AgFa© Cost of Production Report for 92 Great Lakes Graziers. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	2000 per Farm	2000 per CWT Sold	2000 per CWT EQ
Interest Cost			
Mortgage Interest	10,742.01	0.71	0.54
Other Interest	2,544.86	0.17	0.13
Total Interest Cost	13,286.87	0.88	0.67
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	766.76	0.05	0.04
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	17,954.46	1.19	0.90
Value of Unpaid Labor & Management	36,806.46	2.44	1.85
Total Labor Cost	55,527.67	3.67	2.78
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	24,553.76	1.62	1.23
Interest on Equity Capital	22,174.27	1.47	1.11
Total Depreciation & Equity Cost	46,728.03	3.09	2.34
Total Expenses	271,768.30	17.98	13.63
Total Income - Total Expenses	(25,883.04)	(1.71)	(1.30)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	212,787.57	14.08	10.67
Net Farm Income From Operations (NFIFO)	33,097.69	2.19	1.66
Gain (Loss) on Sale of All Farm Capital Assets	2,427.35	0.16	0.12
Net Farm Income (NFI)	35,525.04	2.35	1.78



**Table 1-4
The Average AgFA© Financial Measures Report
Showing Selected Measures of Financial Performance for 92 Great Lakes Graziers**

	<u>2000</u> per Farm	<u>2000</u> per Cow	<u>2000</u> per CWT EQ
Profitability			
(Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income From Operations	\$33,097.69	\$368.71	\$1.66
Net Farm Income	\$35,525.04	\$395.75	\$1.78
Rate of Return on Assets (ROROA)	9.59%	9.59%	9.59%
Cost (Tax) Depreciation Claimed	\$24,584.20	\$273.87	\$1.23
Rate of Return on Equity	1.96 %	1.96 %	1.96 %
Net Profit Margin	4.88 %	4.88 %	4.88 %
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income From Operations	\$45,081.51	\$502.21	\$2.26
Net Farm Income	\$47,508.86	\$529.25	\$2.38
Rate of Return on Assets (ROROA)	3.78 %	3.78%	3.78%
Economic Depreciation Claimed	\$12,600.37	\$140.37	\$0.63
Rate of Return on Equity	2.41 %	2.41 %	2.41%
Net Profit Margin	9.76 %	9.76 %	9.76%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	1.963	1.963	1.963
Asset Turnover (Market Value and Economic)	0.388	0.388	0.388
Basic Cost (both)*	0.635	0.635	0.635
Wages Paid (both)*	0.076	0.076	0.076
Interest Paid (both)	0.054	0.054	0.054
Economic Depreciation	0.051	0.051	0.051
Net Farm Income from Operations	0.183	0.183	0.183
Cost (Tax) Depreciation	0.100	0.051	0.051
Net Farm Income from Operations (Cost and Tax)	0.135	0.135	0.135
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$40,888.05	\$455.49	\$2.05
Coverage Margin	\$12,353.10	\$137.61	\$0.62
Term Debt Coverage Ratio	1.74	1.74	1.74
Liquidity			
Net Cash Income	\$55,320.75	\$616.28	\$2.77
Working Capital	\$28,620.67	\$318.84	\$1.44
Current Ratio	1.79	1.79	1.79
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$620,258.19	\$6,909.70	\$31.10
Beginning Total Farm Liabilities	\$187,376.50	\$2,087.38	\$9.40
Ending Total Farm Assets	\$647,747.91	\$7,215.94	\$32.48
Ending Total Farm Liabilities	\$193,658.67	\$2,157.36	\$9.71
Ending Farm Net Worth	\$454,089.23	\$5,058.57	\$22.77
Change in Farm Net Worth	\$21,207.54	\$236.25	\$1.06
Farm Debt to Asset Ratio	0.300	0.300	0.300
Farm Equity to Asset Ratio	0.700	0.700	0.700

*Basic Cost and Wages Paid Ratios are combined into an Operating Cost Ratio on some Financial analysis



**Table 1-5
The Average AgFa© Balance Sheet of 92 Great Lakes Graziers in 2000
Showing the Current Market Values and Historic Cost Values of Assets**

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost Basis</u>	
Current Assets				
Cash Accounts	9,602	10,638		
Prepaid Expenses & Purchased Inventories	10,348	8,209		
Raised Feed Inventories	28,930	30,402		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	13,393	13,748		
Market Livestock & Etc.	1,704	1,645		
Total Current Assets	63,978	64,641		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	138,239	142,447		
Purchased Breeding Livestock	0	0	0	15
Machinery & Equipment	107,648	114,411	9,036	7,968
Buildings	15,364	15,689	9,678	9,492
Land & House	278,883	292,406	36,614	37,423
Other Non-Current Assets	16,146	18,153	5,860	5,772
Total Non-Current Assets	556,280	583,107	61,188	60,670
Total Farm Assets	620,258	647,748		
Current Liabilities				
Accounts Payable	4,322	5,628		
Current Portion of Non-Current Liabilities	17,778	20,595		
Other Current Liabilities	6,435	9,797		
Total Current Liabilities	28,535	36,020		
Non-Current Liabilities				
Intermediate Liabilities	11,331	10,593		
Long-Term Liabilities	147,510	147,045		
Contingent Liabilities	144,709	151,587		
Total Non-Current Liabilities	303,551	309,225		
Total Farm Liabilities	332,086	345,245		
Non-Farm Assets	11,781	12,183		
Non-Farm Liabilities	2,694	2,780		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>	
Contributed Capital	413	1,320	907	
Retained Earnings*	75,615	72,780	-2,835	*1 All current assets
Valuation Adjustment	212,144	228,403	16,259	and raised breeding
Total Farm Equities	288,172	302,503	14,330	livestock are included
Non-Farm Equities	9,087	9,403	316	in retained earnings
Total Equities	297,260	311,906	14,646	

XII. Comparing the Top Half with the Bottom Half of Graziers Sorted by NFIFO/CWT EQ Sold⁸

The average “top half” herd is smaller, produces about five percent more milk per cow, has a lower basic cost per CWT EQ and has over four times as much NFIFO per CWT EQ and NFIFO per COW than the “bottom half” herds. For every basic cost item, the top group spent less per CWT EQ than the bottom group, except for breeding, fertilizer and lime, farm insurance and seeds. Also, the top group spends \$0.34 per CWT EQ less for interest, \$0.28 per CWT EQ less for labor, and \$0.18 less per CWT EQ for depreciation than the low group.

Overall, the top herds have a \$1.60 per CWT EQ advantage in basic costs and another \$0.81 per CWT EQ advantage in the four cost categories (paid labor, paid management, depreciation and interest) that are added to the basic cost category to create the allocated cost category (allocated costs equals total income minus NFIFO).

This accounts for the \$2.41 per CWT EQ advantage that the top herds have in NFIFO.

Table 2-1

Comparing The Top Half With The Bottom Half of Graziers Sorted by NFIFO per CWT EQ Sold / Most Performance Measures Selected from Tables 2-3 to 2-10	Top Half	Bottom Half	Average
Number of Herds	46	44	92
Number of Cows per Herd	78	104	90
Average Lbs. Milk per Cow	17380	16530	16,836
Average Lbs. Milk per Herd	1,361,892	1,718,782	1,511,264
Average Basic Cost per CWT EQ	\$6.96	\$8.56	\$7.83
Allocated Cost per CWT EQ	\$9.35	\$11.76	\$10.67
Allocated Minus Basic Cost per CWT EQ	\$2.39	\$3.20	\$2.84
NFIFO per Cow	\$687	\$123	\$395
NFIFO per CWT EQ	\$2.98	\$0.57	\$1.66
NFIFO per Farm	\$53,876	\$12,790	\$33,098
NFIFO CWT EQ (without deducting any labor compensation)	\$3.77	\$1.64	\$2.60

If paid labor and management compensation were added back, the NFIFO per CWT EQ would increase to \$3.77 for the top half and to \$1.64 for the bottom half.

Selected Comparisons from Above Using the Current Market Value of Assets

Table 2-2

	Top Half	Bottom Half	Average
Herds	46	44	92
NFIFO per COW	\$864	\$223	\$502
NFIFO per CWT EQ	\$3.74	\$1.03	\$2.26

See tables 2-3 to 2-10 for more details about the average financial performance of the top and bottom half herds.

⁸ CWT EQ sold is not the same as actual hundredweights of milk sold. See page 11 and 12 for more information about CWT EQ.



Table 2-3, p. 1

The Average AgFa© Farm Earnings Report for the Top Half of Great Lakes Graziers. The 46 Top Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) Per CWT EQ.

Income	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	178,059.80	2,272.37	9.84
Raised Non-Breeding Livestock Sales	3,847.20	49.10	0.21
Crop Sales	852.11	10.87	0.05
Distributions Received from Cooperatives	603.91	7.71	0.03
Agricultural Program Payments	16,724.39	213.43	0.92
Custom Hire (Machine Work) Income	696.15	8.88	0.04
Other Income, Incl. Tax Credits, Refunds	3,331.89	42.52	0.18
Basis in Breeding Livestock Sold	(31.52)	(0.40)	0.00
Sale of Raised Breeding Livestock	10,809.96	137.95	0.60
Total Cash Income - Basis Adjustments	214,893.89	2,742.44	11.87
Non-Cash Income			
Change in Raised Crop Inventories	4,519.80	57.68	0.25
Change in Remaining Current Assets	623.29	7.95	0.03
Change in Raised Breeding Livestock	3,143.48	40.12	0.17
Total Non-Cash Income	8,286.58	105.75	0.46
Total Income	223,180.47	2,848.19	12.33



Table 2-3, p. 2

The Average AgFa© Farm Earnings Report for the Top Half of Great Lakes Graziers. The 46 Top Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) Per CWT EQ.

Expenses	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Cost of Items for Resale	0.00	0.00	0.00
Breeding Fees	2,508.17	32.01	0.14
Car and Truck Expenses	223.59	2.85	0.01
Chemicals	1,689.17	21.56	0.09
Custom Hire (Machine Work)	4,801.74	61.28	0.27
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	1,232.52	15.73	0.07
Feed Purchase	45,508.13	580.77	2.51
Fertilizer and Lime	4,360.83	55.65	0.24
Freight and Trucking	886.39	11.31	0.05
Gasoline, Fuel, and Oil	4,860.11	62.02	0.27
Farm Insurance	3,574.52	45.62	0.20
Mortgage Interest	6,564.65	83.78	0.36
Other Interest	2,052.33	26.19	0.11
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	13,013.26	166.07	0.72
Rent/Lease Equipment	199.07	2.54	0.01
Rent/Lease Other	3,971.63	50.69	0.22
Repairs and Maintenance	11,967.65	152.73	0.66
Seeds and Plants Purchased	2,283.63	29.14	0.13
Supplies Purchased	5,572.07	71.11	0.31
Taxes - Other	4,700.15	59.98	0.26
Utilities	5,376.74	68.62	0.30
Veterinary Fees and Medicine	4,483.59	57.22	0.25
Other Farm Expenses	3,610.35	46.07	0.20
Marketing & Hedging	8,658.91	110.50	0.48
Other Crop Expenses	168.46	2.15	0.01
Other Livestock Expenses	6,529.02	83.32	0.36
Total Cash Expense	148,796.67	1,898.92	8.22
Non-Cash Expenses			
Change in Prepaid Expenses	512.54	6.54	0.03
Change in Accounts Payable	(518.13)	(6.61)	(0.03)
Machinery, Equipment and Building Depreciation	20,452.15	261.01	1.13
Livestock Depreciation	60.87	0.78	0.00
Total Non-Cash Expenses	20,507.43	261.71	1.13
Total Expenses	169,304.11	2,160.63	9.35
Net Farm Income From Operations (NFIFO)	53,876.36	687.56	2.98
Gain (Loss) on Sale of All Farm Capital Assets	885.96	11.31	0.05
Net Farm Income (NFI)	54,762.31	698.87	3.03



Table 2-4, p. 1

The Average AgFa® Cost of Production Report for the Top Half of Great Lakes Graziers. The 46 Top Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) per CWT EQ. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

Income	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income	223,180.47	16.39	12.33
Expenses	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost			
Breeding Fees	2,508.17	0.18	0.14
Car and Truck Expenses	223.59	0.02	0.01
Chemicals	1,689.17	0.12	0.09
Custom Hire (Machine Work)	4,801.74	0.35	0.27
Feed Purchase	45,508.13	3.34	2.51
Fertilizer and Lime	4,360.83	0.32	0.24
Freight and Trucking	886.39	0.07	0.05
Gasoline, Fuel, and Oil	4,860.11	0.36	0.27
Farm Insurance	3,574.52	0.26	0.20
Marketing & Hedging	8,658.91	0.64	0.48
Rent/Lease Equipment	199.07	0.01	0.01
Rent/Lease Other	3,971.63	0.29	0.22
Repairs and Maintenance	11,967.65	0.88	0.66
Seeds and Plants Purchased	2,283.63	0.17	0.13
Supplies Purchased	5,572.07	0.41	0.31
Taxes - Other	4,700.15	0.35	0.26
Utilities	5,376.74	0.39	0.30
Veterinary Fees and Medicine	4,483.59	0.33	0.25
Other Crop Expenses	168.46	0.01	0.01
Other Livestock Expenses	6,529.02	0.48	0.36
Other Farm Expenses	3,610.35	0.27	0.20
Change in Prepaid Expenses	512.54	0.04	0.03
Change in Accounts Payable	(518.13)	(0.04)	(0.03)
Cost of Items for Resale	0.00	0.00	0.00
Depreciation on Purchased Breeding Livestock	60.87	0.00	0.00
Total Basic Cost	125,989.20	9.25	6.96



Table 2-4, p. 2

The Average AgFa© Cost of Production Report for the Top Half of Great Lakes Graziers. The 46 Top Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) per CWT EQ. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Interest Cost			
Mortgage Interest	6,564.65	0.48	0.36
Other Interest	2,052.33	0.15	0.11
Total Interest Cost	8,616.98	0.63	0.48
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	1,232.52	0.09	0.07
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	13,013.26	0.96	0.72
Value of Unpaid Labor & Management	37,092.70	2.72	2.05
Total Labor Cost	51,338.48	3.77	2.84
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	20,452.15	1.50	1.13
Interest on Equity Capital	21,628.28	1.59	1.19
Total Depreciation & Equity Cost	42,080.44	3.09	2.32
Total Expenses	228,025.09	16.74	12.60
Total Income - Total Expenses	(4,844.62)	(0.36)	(0.27)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	169,304.11	12.43	9.35
Net Farm Income From Operations (NFIFO)	53,876.36	3.96	2.98
Gain (Loss) on Sale of All Farm Capital Assets	885.96	0.07	0.05
Net Farm Income (NFI)	54,762.31	4.02	3.03



Table 2-5

The Average AgFA© Financial Measures Report for the Top Half of Great Lakes Graziers. The 46 Top Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) per CWT EQ

	<u>2000</u> per Farm	<u>2000</u> per Cow	<u>2000</u> per CWT EQ
Profitability (Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income From Operations	\$53,876.36	\$687.56	\$2.98
Net Farm Income	\$54,762.31	\$698.87	\$3.03
Rate of Return on Assets (ROROA)	20.27%	20.27%	20.28%
Cost (Tax) Depreciation Claimed	\$20,513.02	\$261.78	\$1.13
Rate of Return on Equity	-2,055.35%	-2,055.35%	-2,055.37
Net Profit Margin	11.78%	11.78%	11.78%
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income From Operations	\$67,702.56	\$864.01	\$3.74
Net Farm Income	\$68,588.52	\$875.31	\$3.79
Rate of Return on Assets (ROROA)	7.12%	7.12%	7.12%
Economic Depreciation Claimed	\$6,686.82	\$85.34	\$0.37
Rate of Return on Equity	7.28%	7.28%	7.28%
Net Profit Margin	17.97%	17.97%	17.97%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	1.721	1.721	1.721
Asset Turnover (Market Value and Economic)	0.396	0.396	0.396
Basic Cost (both)*	0.564	0.564	0.564
Wages Paid (both)*	0.064	0.064	0.064
Interest Paid (both)	0.039	0.039	0.039
Economic Depreciation	0.030	0.030	0.030
Net Farm Income from Operations (Market Value and Economic)	0.303	0.303	0.303
Cost (Tax) Depreciation	0.092	0.030	0.030
Net Farm Income from Operations (Cost and Tax)	0.241	0.241	0.241
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$48,591.88	\$620.12	\$2.68
Coverage Margin	\$29,406.36	\$375.28	\$1.62
Term Debt Coverage Ratio	2.80	2.80	2.80
Liquidity			
Net Cash Income	\$66,128.74	\$843.92	\$3.65
Working Capital	\$39,086.70	\$498.82	\$2.16
Current Ratio	2.77	2.77	2.77
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$548,489.13	\$6,999.72	\$30.30
Beginning Total Farm Liabilities	\$133,355.13	\$1,701.85	\$7.37
Ending Total Farm Assets	\$577,663.84	\$7,372.05	\$31.91
Ending Total Farm Liabilities	\$127,666.50	\$1,629.26	\$7.05
Ending Farm Net Worth	\$449,997.34	\$5,742.79	\$24.86
Change in Farm Net Worth	\$34,863.34	\$444.92	\$1.93
Farm Debt to Asset Ratio	0.232	0.232	0.232
Farm Equity to Asset Ratio	0.768	0.768	0.768

* Basic Cost and Wages Paid ratios are combined into an Operating Cost ratio on some financial analysis



Table 2-6

The Average AgFA© Balance Sheet for the Top Half of Great Lakes Graziers in 2000 Showing the Current Market Values and Historic Cost Values of Assets. The 46 Top Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) per CWT EQ

<u>Basis</u>	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost</u>	
Current Assets				
Cash Accounts	7,087	9,262		
Prepaid Expenses & Purchased Inventories	10,837	10,325		
Raised Feed Inventories	24,434	28,954		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	10,431	11,214		
Market Livestock & Etc.	1,585	1,425		
Total Current Assets	54,373	61,179		
Non-Current Assets				
Raised Breeding Livestock	119,516	122,660		
Purchased Breeding Livestock	0	0	0	30
Machinery & Equipment	89,829	95,703	9,106	8,296
Buildings	15,797	16,054	12,919	12,372
Land & House	251,060	261,329	41,950	44,387
Other Non-Current Assets	17,913	20,739	7,280	7,409
Total Non-Current Assets	494,116	516,485	71,256	72,494
Total Farm Assets	548,489	577,664		
Current Liabilities				
Accounts Payable	2,117	1,599		
Current Portion of Non-Current Liabilities	11,799	13,427		
Other Current Liabilities	5,270	7,066		
Total Current Liabilities	19,186	22,092		
Non-Current Liabilities				
Intermediate Liabilities	9,277	5,974		
Long-Term Liabilities	104,892	99,600		
Contingent Liabilities	123,876	130,815		
Total Non-Current Liabilities	238,045	236,390		
Total Farm Liabilities	257,231	258,482		
Non-Farm Assets	11,605	11,707		
Non-Farm Liabilities	3,013	3,233		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	826	2,457	1,630
Retained Earnings*	110,964	126,210	15,246
Valuation Adjustment	179,468	190,516	11,048
Total Farm Equities	291,258	319,182	27,924
Non-Farm Equities	8,592	8,474	-118
Total Equities	299,850	327,656	27,806

* All current assets and raised breeding livestock are included in retained earnings



Table 2-7, p.1

The Average AgFA© Farm Earnings Report for the Bottom Half of Great Lakes Graziers. The 44 Bottom Half Graziers Were Sorted by Net Farm Income from Operations (NFIFO) per CWT EQ

Income	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	0.00	0.00	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	227,134.61	2,184.46	10.08
Raised Non-Breeding Livestock Sales	7,033.50	67.64	0.31
Crop Sales	951.84	9.15	0.04
Distributions Received from Cooperatives	234.89	2.26	0.01
Agricultural Program Payments	18,850.25	181.29	0.84
Custom Hire (Machine Work) Income	2,652.80	25.51	0.12
Other Income, Incl. Tax Credits, Refunds	4,295.98	41.32	0.19
Basis in Breeding Livestock Sold	(320.45)	(3.08)	(0.01)
Sale of Raised Breeding Livestock	13,325.14	128.15	0.59
Total Cash Income - Basis Adjustments	274,158.55	2,636.72	12.16
Non-Cash Income			
Change in Raised Crop Inventories	(1,820.57)	(17.51)	(0.08)
Change in Remaining Current Assets	25.64	0.25	0.00
Change in Raised Breeding Livestock	5,577.68	53.64	0.25
Total Non-Cash Income	3,782.74	36.38	0.17
Total Income	277,941.29	2,673.10	12.33



Table 2-7, p.2

The Average AgFA© Farm Earnings Report for the Bottom Half of Great Lakes Graziers. The 44 Bottom Half Graziers Were Sorted by Net Farm Income from Operations (NFIFO) per CWT EQ

Expenses	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Breeding Fees	2,739.80	26.35	0.12
Car and Truck Expenses	371.75	3.58	0.02
Chemicals	2,785.02	26.78	0.12
Custom Hire (Machine Work)	7,838.16	75.38	0.35
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	314.68	3.03	0.01
Feed Purchase	64,738.77	622.62	2.87
Fertilizer and Lime	4,704.73	45.25	0.21
Freight and Trucking	1,248.82	12.01	0.06
Gasoline, Fuel, and Oil	7,063.48	67.93	0.31
Farm Insurance	4,221.09	40.60	0.19
Mortgage Interest	15,296.66	147.12	0.68
Other Interest	3,122.80	30.03	0.14
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	23,899.55	229.85	1.06
Rent/Lease Equipment	804.84	7.74	0.04
Rent/Lease Other	7,265.32	69.87	0.32
Repairs and Maintenance	21,838.98	210.04	0.97
Seeds and Plants Purchased	2,446.52	23.53	0.11
Supplies Purchased	7,593.95	73.03	0.34
Taxes - Other	6,385.82	61.42	0.28
Taxes - Payroll	57.48	0.55	0.00
Utilities	7,788.61	74.91	0.35
Veterinary Fees and Medicine	6,936.27	66.71	0.31
Other Farm Expenses	6,222.41	59.84	0.28
Marketing & Hedging	12,960.73	124.65	0.57
Other Crop Expenses	9.77	0.09	0.00
Other Livestock Expenses	9,667.70	92.98	0.43
Total Cash Expense	228,323.71	2,195.90	10.13
Non-Cash Expenses			
Change in Prepaid Expenses	3,960.61	38.09	0.18
Change in Accounts Payable	3,272.66	31.47	0.15
Machinery, Equipment and Building Depreciation	29,594.73	284.63	1.31
Livestock Depreciation	0.00	0.00	0.00
Total Non-Cash Expenses	36,828.00	354.19	1.63
Total Expenses	265,151.71	2,550.09	11.76
Net Farm Income from Operations (NFIFO)	12,789.59	123.00	0.57
Gain (Loss) on Sale of All Farm Capital Assets	3,971.86	38.20	0.18
Net Farm Income (NFI)	16,761.45	161.20	0.74



Table 2-8, p. 1

The Average AgFA© Cost of Production Report for the Bottom Half of Great Lakes Graziers. The 44 Bottom Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) per CWT EQ. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

Income		<u>2000</u> Cost (tax)	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income		277,941.29	16.17	12.33
Expenses		<u>2000</u> Cost (tax)	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost				
	Breeding Fees	2,739.80	0.16	0.12
	Car and Truck Expenses	371.75	0.02	0.02
	Chemicals	2,785.02	0.16	0.12
	Custom Hire (Machine Work)	7,838.16	0.46	0.35
	Feed Purchase	64,738.77	3.77	2.87
	Fertilizer and Lime	4,704.73	0.27	0.21
	Freight and Trucking	1,248.82	0.07	0.06
	Gasoline, Fuel, and Oil	7,063.48	0.41	0.31
	Farm Insurance	4,221.09	0.25	0.19
	Marketing & Hedging	12,960.73	0.75	0.57
	Rent/Lease Equipment	804.84	0.05	0.04
	Rent/Lease Other	7,265.32	0.42	0.32
	Repairs and Maintenance	21,838.98	1.27	0.97
	Seeds and Plants Purchased	2,446.52	0.14	0.11
	Supplies Purchased	7,593.95	0.44	0.34
	Taxes - Other	6,385.82	0.37	0.28
	Utilities	7,788.61	0.45	0.35
	Veterinary Fees and Medicine	6,936.27	0.40	0.31
	Other Crop Expenses	9.77	0.00	0.00
	Other Livestock Expenses	9,667.70	0.56	0.43
	Other Farm Expenses	6,222.41	0.36	0.28
	Change in Prepaid Expenses	3,960.61	0.23	0.18
	Change in Accounts Payable	3,272.66	0.19	0.15
	Taxes - Payroll	57.48	0.00	0.00
	Depreciation on Purchased Breeding Livestock	0.00	0.00	0.00
Total Basic Cost		192,923.30	11.22	8.56



Table 2-8, p. 2

The Average AgFA© Cost of Production Report for the Bottom Half of Great Lakes Graziers. The 44 Bottom Half Graziers Were Sorted by Net Farm Income From Operations (NFIFO) per CWT EQ. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Interest Cost			
Mortgage Interest	15,296.66	0.89	0.68
Other Interest	3,122.80	0.18	0.14
Total Interest Cost	18,419.45	1.07	0.82
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	314.68	0.02	0.01
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	23,899.55	1.39	1.06
Value of Unpaid Labor & Management	36,943.66	2.15	1.64
Total Labor Cost	61,157.89	3.56	2.71
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	29,594.73	1.72	1.31
Interest on Equity Capital	22,998.21	1.34	1.02
Total Depreciation & Equity Cost	52,592.94	3.06	2.33
Total Expenses	325,093.58	18.91	14.42
Total Income - Total Expenses	(47,152.29)	(2.74)	(2.09)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	265,151.71	15.43	11.76
Net Farm Income From Operations (NFIFO)	12,789.59	0.74	0.57
Gain (Loss) on Sale of All Farm Capital Assets	3,971.86	0.23	0.18
Net Farm Income (NFI)	16,761.45	0.98	0.74



Table 2-9

The Average AgFA© Financial Measures Report for the Bottom Half of Great Lakes Graziers. The 44 Bottom Half Graziers Were Sorted by Net Farm Income from Operations (NFIFO) per CWT EQ

	<u>2000</u>	<u>2000</u>	<u>2000</u>
	per Farm	per Cow	per CWT EQ
Profitability (Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income From Operations	\$12,789.59	\$123.00	\$0.57
Net Farm Income	\$16,761.45	\$161.20	\$0.74
Rate of Return on Assets (ROROA)	-1.44%	-1.44%	-1.44%
Cost (Tax) Depreciation Claimed	\$29,594.73	\$284.63	\$1.31
Rate of Return on Equity	15.28%	15.28%	15.28%
Net Profit Margin	-0.63%	-0.63%	-0.63%
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income From Operations	\$23,238.40	\$223.50	\$1.03
Net Farm Income	\$27,210.27	\$261.69	\$1.21
Rate of Return on Assets (ROROA)	1.22%	1.22%	1.22%
Economic Depreciation Claimed	\$19,145.91	\$184.14	\$0.85
Rate of Return on Equity	-2.12%	-2.12%	-2.12%
Net Profit Margin	3.13%	3.13%	3.13%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	2.263	2.263	2.263
Asset Turnover (Market Value and Economic)	0.389	0.389	0.389
Basic Cost (both)*	0.694	0.694	0.694
Wages Paid (both)*	0.087	0.087	0.087
Interest Paid (both)	0.066	0.066	0.066
Economic Depreciation	0.069	0.069	0.069
Net Farm Income from Operations (Market Value and Economic)	0.084	0.084	0.084
Cost (Tax) Depreciation	0.106	0.069	0.069
Net Farm Income from Operations (Cost and Tax)	0.046	0.046	0.046
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$33,158.47	\$318.90	\$1.47
Coverage Margin	-\$6,048.93	-\$58.18	-\$0.27
Term Debt Coverage Ratio	1.20	1.20	1.20
Liquidity			
Net Cash Income	\$46,155.29	\$443.90	\$2.05
Working Capital	\$18,932.76	\$182.09	\$0.84
Current Ratio	1.37	1.37	1.37
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$703,269.09	\$6,763.68	\$31.20
Beginning Total Farm Liabilities	\$246,509.64	\$2,370.80	\$10.94
Ending Total Farm Assets	\$726,482.54	\$6,986.94	\$32.23
Ending Total Farm Liabilities	\$263,313.45	\$2,532.41	\$11.68
Ending Farm Net Worth	\$463,169.09	\$4,454.52	\$20.55
Change in Farm Net Worth	\$6,409.63	\$61.64	\$0.28
Farm Debt to Asset Ratio	0.357	0.357	0.357
Farm Equity to Asset Ratio	0.643	0.643	0.643

* Basic Cost and Wages Paid ratios are combined into an Operating Cost ratio on some financial analysis



Table 2-10

The Average AgFA® Balance Sheet for the Bottom Half of Great Lakes Graziers in 2000 Showing the Current Market Values and Historic Cost Values of Assets. The 44 Bottom Half Graziers Were Sorted by Net Farm Income from Operations (NFIFO) per CWT EQ

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost Basis</u>	
Current Assets				
Cash Accounts	12,285	12,374		
Prepaid Expenses & Purchased Inventories	10,281	6,321		
Raised Feed Inventories	34,659	32,838		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	17,018	17,000		
Market Livestock & Etc.	1,906	1,950		
Total Current Assets	76,150	70,483		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	161,463	167,040		
Purchased Breeding Livestock	0	0	0	0
Machinery & Equipment	129,833	137,775	9,298	7,919
Buildings	14,815	15,277	6,250	6,475
Land & House	306,540	320,308	31,017	30,161
Other Non-Current Assets	14,469	15,599	4,097	3,779
Total Non-Current Assets	627,119	656,000	50,662	48,334
Total Farm Assets	703,269	726,483		
Current Liabilities				
Accounts Payable	6,823	10,096		
Current Portion of Non-Current Liabilities	24,438	28,483		
Other Current Liabilities	7,946	12,971		
Total Current Liabilities	39,207	51,550		
Non-Current Liabilities				
Intermediate Liabilities	13,994	15,904		
Long-Term Liabilities	193,308	195,860		
Contingent Liabilities	168,674	174,761		
Total Non-Current Liabilities	375,976	386,525		
Total Farm Liabilities	415,183	438,075		
Non-Farm Assets	8,903	9,446		
Non-Farm Liabilities	2,482	2,433		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	0	191	191
Retained Earnings*	41,765	22,353	-19,412
Valuation Adjustment	246,321	265,864	19,543
Total Farm Equities	288,086	288,408	322
Non-Farm Equities	6,421	7,013	592
Total Equities	294,506	295,420	914

*All Current assets and raised breeding livestock are included in retained earnings

XIII. Comparing Herds by Size: Less Than 100 Cows vs. More than 100 Cows

The average “large” herd has almost three times as many cows, producing slightly less milk per cow, and is less profitable on a per cow and a per CWT EQ basis. The average “large” farm does provide many more total dollars of NFIFO per farm. In the Basic Cost category, the larger herds have a higher cost per CWT EQ for chemicals, custom hire, feed purchased, rent, repairs, seed, vet and medical expenses and change in prepaid expenses.

The smaller herds have a basic cost per CWT EQ that is \$0.13 higher than the larger herds. However, the larger herds have a cost of paid labor that is \$0.54 per CWT EQ higher. This provides the smaller herds much of their advantage in NFIFO per CWT EQ. If all labor expenses were added back to NFIFO, the larger herd size would have a slightly higher NFIFO per CWT EQ as shown below.

The smaller herds have a \$0.57 per CWT EQ advantage in the four cost categories (paid labor, paid management, depreciation and interest) that are added to the basic cost category to create the allocated cost category (allocated costs equals total income minus NFIFO).

This accounts for the \$0.44 per CWT EQ overall advantage that the smaller herds have in NFIFO per CWT EQ.

Table 3-1

Comparing Herds by Size: More Than 100 vs. Less than 100 / Most Performance Measures Selected from Tables 3-3 to 3-10			
	Less than 100 Cows	More than 100 Cows	Average of 92 Graziers
Number of Herds	68	24	92
Number of Cows per Herd	59	176	90
Average Lbs. Milk per Cow	16,900	16,744	16,836
Average Lbs. Milk per Herd	1,000,211	2,959,249	1,511,264
Average Basic Cost per CWT EQ	\$7.90	\$7.77	\$7.83
Allocated Cost per CWT EQ	\$10.44	\$10.88	\$10.67
Allocated Minus Basic Cost per CWT EQ	\$2.54	\$3.11	\$2.84
NFIFO per Cow	\$428	\$365	\$395
NFIFO per CWT EQ	\$1.89	\$1.45	\$1.66
NFIFO per Farm	\$24,256	\$58,150	\$33,098
NFIFO per CWT EQ (without deducting any labor compensation)	\$2.55	\$2.65	\$2.60

Selected Comparisons from Above, Using the Current Market Valuation Method

Table 3-2

	Less Than 100 Cows	More Than 100 Cows	Average
Herds	68	24	92
NFIFO per COW	\$560	\$447	\$502
NFIFO per CWT EQ	\$2.58	\$1.97	\$2.26

Tables 3-3 to 3-10 provide more information about the financial performance of the average herd with less than 100 cows to the average herd with more than 100 cows.



Table 3-3, p.1

The Average AgFA© Farm Earnings Report for the 68 Great Lakes Graziers with Less Than 100 Cows

Income	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	130,527.68	2,205.46	10.16
Raised Non-Breeding Livestock Sales	3,363.90	56.84	0.26
Crop Sales	806.19	13.62	0.06
Distributions Received from Cooperatives	458.15	7.74	0.04
Agricultural Program Payments	10,761.97	181.84	0.84
Custom Hire (Machine Work) Income	575.87	9.73	0.04
Other Income, Incl. Tax Credits, Refunds	2,584.43	43.67	0.20
Basis in Breeding Livestock Sold	(58.09)	(0.98)	0.00
Sale of Raised Breeding Livestock	8,017.62	135.47	0.62
Total Cash Income - Basis Adjustments	157,037.71	2,653.39	12.23
Non-Cash Income			
Change in Raised Crop Inventories	566.94	9.58	0.04
Change in Remaining Current Assets	109.31	1.85	0.01
Change in Raised Breeding Livestock	665.24	11.24	0.05
Total Non-Cash Income	1,341.48	22.67	0.10
Total Income	158,379.19	2,676.06	12.33



Table 3-3, p. 2

The Average AgFA© Farm Earnings Report for the 68 Great Lakes Graziers with Less Than 100 Cows

Expenses	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Cost of Items for Resale	0.00	0.00	0.00
Breeding Fees	1,842.75	31.14	0.14
Car and Truck Expenses	247.62	4.18	0.02
Chemicals	1,019.40	17.22	0.08
Custom Hire (Machine Work)	3,313.13	55.98	0.26
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	529.65	8.95	0.04
Feed Purchase	34,454.46	582.16	2.68
Fertilizer and Lime	3,115.88	52.65	0.24
Freight and Trucking	654.53	11.06	0.05
Gasoline, Fuel, and Oil	3,947.72	66.70	0.31
Farm Insurance	2,716.47	45.90	0.21
Mortgage Interest	6,507.71	109.96	0.51
Other Interest	1,890.19	31.94	0.15
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	7,952.03	134.36	0.62
Rent/Lease Equipment	461.03	7.79	0.04
Rent/Lease Other	2,712.68	45.83	0.21
Repairs and Maintenance	10,545.79	178.19	0.82
Seeds and Plants Purchased	1,449.00	24.48	0.11
Supplies Purchased	4,353.25	73.55	0.34
Taxes - Other	3,814.93	64.46	0.30
Taxes - Payroll	37.19	0.63	0.00
Utilities	4,908.90	82.94	0.38
Veterinary Fees and Medicine	3,333.37	56.32	0.26
Other Farm Expenses	3,589.74	60.65	0.28
Marketing & Hedging	6,941.81	117.29	0.54
Other Crop Expenses	112.16	1.90	0.01
Other Livestock Expenses	6,168.81	104.23	0.48
Total Cash Expense	116,620.18	1,970.47	9.08
Non-Cash Expenses			
Change in Prepaid Expenses	669.07	11.31	0.05
Change in Accounts Payable	1,124.93	19.01	0.09
Machinery, Equipment and Building Depreciation	15,709.31	265.43	1.22
Livestock Depreciation	0.00	0.00	0.00
Total Non-Cash Expenses	17,503.31	295.74	1.36
Total Expenses	134,123.49	2,266.22	10.44
Net Farm Income from Operations (NFIFO)	24,255.70	409.84	1.89
Gain (Loss) on Sale of All Farm Capital Assets	1,103.96	18.65	0.09
Net Farm Income (NFI)	25,359.66	428.49	1.97



Table 3-4, p. 1

The Average AgFA© Cost of Production Report for the 68 Great Lakes Graziers with Less Than 100 Cows. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

Income		<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income		158,379.19	15.83	12.33
Expenses		<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost				
Breeding Fees	1,842.75	0.18	0.14	
Car and Truck Expenses	247.62	0.02	0.02	
Chemicals	1,019.40	0.10	0.08	
Custom Hire (Machine Work)	3,313.13	0.33	0.26	
Feed Purchase	34,454.46	3.44	2.68	
Fertilizer and Lime	3,115.88	0.31	0.24	
Freight and Trucking	654.53	0.07	0.05	
Gasoline, Fuel, and Oil	3,947.72	0.39	0.31	
Farm Insurance	2,716.47	0.27	0.21	
Marketing & Hedging	6,941.81	0.69	0.54	
Rent/Lease Equipment	461.03	0.05	0.04	
Rent/Lease Other	2,712.68	0.27	0.21	
Repairs and Maintenance	10,545.79	1.05	0.82	
Seeds and Plants Purchased	1,449.00	0.14	0.11	
Supplies Purchased	4,353.25	0.44	0.34	
Taxes - Other	3,814.93	0.38	0.30	
Utilities	4,908.90	0.49	0.38	
Veterinary Fees and Medicine	3,333.37	0.33	0.26	
Other Crop Expenses	112.16	0.01	0.01	
Other Livestock Expenses	6,168.81	0.62	0.48	
Other Farm Expenses	3,589.74	0.36	0.28	
Change in Prepaid Expenses	669.07	0.07	0.05	
Change in Accounts Payable	1,124.93	0.11	0.09	
Cost of Items for Resale	0.00	0.00	0.00	
Taxes - Payroll	37.19	0.00	0.00	
Depreciation on Purchased Breeding Livestock	0.00	0.00	0.00	
Total Basic Cost	101,534.60	10.15	7.90	



Table 3-4, p. 2

The Average AgFA© Cost of Production Report for the 68 Great Lakes Graziers with Less Than 100 Cows. This Report Shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Interest Cost			
Mortgage Interest	6,507.71	0.65	0.51
Other Interest	1,890.19	0.19	0.15
Total Interest Cost	8,397.90	0.84	0.65
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	529.65	0.05	0.04
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	7,952.03	0.80	0.62
Value of Unpaid Labor & Management	33,532.53	3.35	2.61
Total Labor Cost	42,014.21	4.20	3.27
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	15,709.31	1.57	1.22
Interest on Equity Capital	16,700.83	1.67	1.30
Total Depreciation & Equity Cost	32,410.14	3.24	2.52
Total Expenses	184,356.85	18.43	14.35
Total Income - Total Expenses	(25,977.66)	(2.60)	(2.02)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	134,123.49	13.41	10.44
Net Farm Income from Operations (NFIFO)	24,255.70	2.43	1.89
Gain (Loss) on Sale of All Farm Capital Assets	1,103.96	0.11	0.09
Net Farm Income (NFI)	25,359.66	2.54	1.97



Table 3-5

The Average AgFA© Financial Measures Report for the 68 Great Lakes Graziers with Less Than 100 Cows

	2000 per Farm	2000 per Cow	2000 per CWT EQ
Profitability (Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income from Operations	\$24,255.70	\$409.84	\$1.89
Net Farm Income	\$25,359.66	\$428.49	\$1.97
Rate of Return on Assets (ROROA)	0.24%	0.24%	0.24%
Cost (Tax) Depreciation Claimed	\$15,709.31	\$265.43	\$1.22
Rate of Return on Equity	25.44 %	25.44 %	25.44 %
Net Profit Margin	0.14 %	0.14 %	0.14 %
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income from Operations	\$33,169.12	\$560.44	\$2.58
Net Farm Income	\$34,273.08	\$579.10	\$2.67
Rate of Return on Assets (ROROA)	1.99%	1.99%	1.99%
Economic Depreciation Claimed	\$6,795.89	\$114.83	\$0.53
Rate of Return on Equity	0.22%	0.22%	0.22%
Net Profit Margin	5.77%	5.77%	5.77%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	1.686	1.686	1.686
Asset Turnover (Market Value and Economic)	0.344	0.344	0.344
Basic Cost (both)*	0.641	0.641	0.641
Wages Paid (both)*	0.054	0.054	0.054
Interest Paid (both)	0.053	0.053	0.053
Economic Depreciation	0.043	0.043	0.043
Net Farm Income from Operations (Market Value and Economic)	0.209	0.209	0.209
Cost (Tax) Depreciation	0.099	0.043	0.043
Net Farm Income from Operations (Cost and Tax)	0.153	0.153	0.153
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$25,769.38	\$435.41	\$2.01
Coverage Margin	\$6,860.20	\$115.91	\$0.53
Term Debt Coverage Ratio	1.64	1.64	1.64
Liquidity			
Net Cash Income	\$40,475.62	\$683.90	\$3.15
Working Capital	\$19,839.50	\$335.22	\$1.54
Current Ratio	1.91	1.91	1.91
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$447,780.41	\$7,565.93	\$34.86
Beginning Total Farm Liabilities	\$122,467.82	\$2,069.28	\$9.53
Ending Total Farm Assets	\$472,377.53	\$7,981.53	\$36.78
Ending Total Farm Liabilities	\$129,656.91	\$2,190.75	\$10.09
Ending Farm Net Worth	\$342,720.62	\$5,790.78	\$26.68
Change in Farm Net Worth	\$17,408.03	\$294.14	\$1.36
Farm Debt to Asset Ratio	0.274	0.274	0.274
Farm Equity to Asset Ratio	0.726	0.726	0.726

* Basic Cost and Wages Paid ratios are combined into an Operating Cost ratio on some financial analysis



Table 3-6

The Average AgFA© Balance Sheet for the 68 Great Lakes Graziers in 2000 with Less Than 100 Cows, Showing Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost Basis</u>	
Current Assets				
Cash Accounts	6,834	7,311		
Prepaid Expenses & Purchased Inventories	6,540	5,871		
Raised Feed Inventories	19,614	20,181		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	7,420	7,739		
Market Livestock & Etc.	817	608		
Total Current Assets	41,225	41,710		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	97,510	98,175		
Purchased Breeding Livestock	0	0	0	17
Machinery & Equipment	79,407	84,369	8,055	6,684
Buildings	16,890	17,409	9,114	9,208
Land & House	196,542	212,845	29,484	31,161
Other Non-Current Assets	16,206	17,871	5,599	5,621
Total Non-Current Assets	406,555	430,668	52,252	52,691
Total Farm Assets	447,780	472,378		
Current Liabilities				
Accounts Payable	2,314	3,439		
Current Portion of Non-Current Liabilities	12,444	13,585		
Other Current Liabilities	4,151	4,846		
Total Current Liabilities	18,909	21,870		
Non-Current Liabilities				
Intermediate Liabilities	7,747	6,361		
Long-Term Liabilities	95,811	101,426		
Contingent Liabilities	102,064	108,127		
Total Non-Current Liabilities	205,623	215,914		
Total Farm Liabilities	224,532	237,784		
Non-Farm Assets	11,896	12,119		
Non-Farm Liabilities	3,513	3,355		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	559	1,662	1,103
Retained Earnings*	67,960	61,257	-6,703
Valuation Adjustment	154,729	171,674	16,945
Total Farm Equities	223,248	234,593	11,345
Non-Farm Equities	8,383	8,765	382
Total Equities	231,631	243,358	11,727

* All current assets and raised breeding livestock are included in retained earnings



Table 3-7, p. 1

The Average AgFA© Farm Earnings Report for the 24 Great Lakes Graziers with More than 100 Cows

Income	<u>2000</u> per Cow	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	0.00	0.00	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	391,714.29	2,220.39	9.78
Raised Non-Breeding Livestock Sales	10,944.42	62.04	0.27
Crop Sales	1,094.04	6.20	0.03
Distributions Received from Cooperatives	337.54	1.91	0.01
Agricultural Program Payments	36,551.08	207.19	0.91
Custom Hire (Machine Work) Income	4,566.13	25.88	0.11
Other Income, Incl. Tax Credits, Refunds	7,416.88	42.04	0.19
Basis in Breeding Livestock Sold	(483.33)	(2.74)	(0.01)
Sale of Raised Breeding Livestock	22,571.58	127.94	0.56
Total Cash Income - Basis Adjustments	474,712.63	2,690.86	11.85
Non-Cash Income			
Change in Raised Crop Inventories	4,035.08	22.87	0.10
Change in Remaining Current Assets	824.64	4.67	0.02
Change in Raised Breeding Livestock	14,246.75	80.76	0.36
Total Non-Cash Income	19,106.48	108.30	0.48
Total Income	493,819.10	2,799.16	12.33



Table 3-7, p. 2

The Average AgFA© Farm Earnings Report for the 24 Great Lakes Graziers with More than 100 Cows

Expenses	<u>2000</u> per Cow	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Breeding Fees	4,637.38	26.29	0.12
Car and Truck Expenses	428.83	2.43	0.01
Chemicals	5,476.00	31.04	0.14
Custom Hire (Machine Work)	14,190.67	80.44	0.35
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	1,438.58	8.15	0.04
Feed Purchase	109,359.17	619.89	2.73
Fertilizer and Lime	8,177.79	46.35	0.20
Freight and Trucking	2,178.58	12.35	0.05
Gasoline, Fuel, and Oil	11,356.08	64.37	0.28
Farm Insurance	7,047.38	39.95	0.18
Mortgage Interest	22,739.21	128.89	0.57
Other Interest	4,399.75	24.94	0.11
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	46,294.67	262.42	1.16
Rent/Lease Equipment	550.83	3.12	0.01
Rent/Lease Other	13,340.13	75.62	0.33
Repairs and Maintenance	33,443.67	189.57	0.84
Seeds and Plants Purchased	4,828.33	27.37	0.12
Supplies Purchased	12,447.25	70.56	0.31
Taxes - Other	10,203.21	57.84	0.25
Utilities	10,927.50	61.94	0.27
Veterinary Fees and Medicine	11,911.75	67.52	0.30
Other Farm Expenses	8,365.38	47.42	0.21
Marketing & Hedging	20,855.79	118.22	0.52
Other Crop Expenses	23.00	0.13	0.00
Other Livestock Expenses	13,193.08	74.78	0.33
Total Cash Expense	377,814.00	2,141.60	9.43
Non-Cash Expenses			
Change in Prepaid Expenses	6,305.92	35.74	0.16
Change in Accounts Payable	1,819.50	10.31	0.05
Machinery, Equipment and Building Depreciation	49,613.04	281.23	1.24
Livestock Depreciation	116.67	0.66	0.00
Total Non-Cash Expenses	57,855.13	327.95	1.44
Total Expenses	435,669.13	2,469.55	10.88
Net Farm Income From Operations (NFIFO)	58,149.98	329.62	1.45
Gain (Loss) on Sale of All Farm Capital Assets	6,176.96	35.01	0.15
Net Farm Income (NFI)	64,326.94	364.63	1.61



Table 3-8, p. 1

The Average AgFA© Cost of Production Report for the 24 Great Lakes Graziers with More Than 100 Cows, Showing Basic Costs, Allocated Costs, Total Costs, FIFO and Other Financial Details

Income		<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income		493,819.10	16.69	12.33
Expenses		<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost				
Breeding Fees	4,637.38	0.16	0.12	
Car and Truck Expenses	428.83	0.01	0.01	
Chemicals	5,476.00	0.19	0.14	
Custom Hire (Machine Work)	14,190.67	0.48	0.35	
Feed Purchase	109,359.17	3.70	2.73	
Fertilizer and Lime	8,177.79	0.28	0.20	
Freight and Trucking	2,178.58	0.07	0.05	
Gasoline, Fuel, and Oil	11,356.08	0.38	0.28	
Farm Insurance	7,047.38	0.24	0.18	
Marketing & Hedging	20,855.79	0.70	0.52	
Rent/Lease Equipment	550.83	0.02	0.01	
Rent/Lease Other	13,340.13	0.45	0.33	
Repairs and Maintenance	33,443.67	1.13	0.84	
Seeds and Plants Purchased	4,828.33	0.16	0.12	
Supplies Purchased	12,447.25	0.42	0.31	
Taxes - Other	10,203.21	0.34	0.25	
Utilities	10,927.50	0.37	0.27	
Veterinary Fees and Medicine	11,911.75	0.40	0.30	
Other Crop Expenses	23.00	0.00	0.00	
Other Livestock Expenses	13,193.08	0.45	0.33	
Other Farm Expenses	8,365.38	0.28	0.21	
Change in Prepaid Expenses	6,305.92	0.21	0.16	
Change in Accounts Payable	1,819.50	0.06	0.05	
Depreciation on Purchased Breeding Livestock	116.67	0.00	0.00	
Total Basic Cost	311,183.88	10.52	7.77	



Table 3-8, p. 2

The Average AgFA© Cost of Production Report for the 24 Great Lakes Graziers with More Than 100 Cows, Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	<u>2000</u>	<u>2000</u>	<u>2000</u>
	per Farm	per CWT Sold	per CWT EQ
Interest Cost			
Mortgage Interest	22,739.21	0.77	0.57
Other Interest	4,399.75	0.15	0.11
Total Interest Cost	27,138.96	0.92	0.68
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	1,438.58	0.05	0.04
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	46,294.67	1.56	1.16
Value of Unpaid Labor & Management	46,082.58	1.56	1.15
Total Labor Cost	93,815.83	3.17	2.34
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	49,613.04	1.68	1.24
Interest on Equity Capital	37,682.36	1.27	0.94
Total Depreciation & Equity Cost	87,295.40	2.95	2.18
Total Expenses	519,434.07	17.55	12.97
Total Income - Total Expenses	(25,614.97)	(0.87)	(0.64)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	435,669.13	14.72	10.88
Net Farm Income From Operations (NFIFO)	58,149.98	1.97	1.45
Gain (Loss) on Sale of All Farm Capital Assets	6,176.96	0.21	0.15
Net Farm Income (NFI)	64,326.94	2.17	1.61



Table 3-9

The Average AgFA© Financial Measures Report for the 24 Great Lakes Graziers with More Than 100 Cows

	2000	2000	2000
	per Farm	per Cow	per CWT EQ
Profitability (Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income from Operations	\$58,149.98	\$329.62	\$1.45
Net Farm Income	\$64,326.94	\$364.63	\$1.61
Rate of Return on Assets (ROROA)	21.22%	21.22%	21.22%
<i>Cost (Tax) Depreciation Claimed</i>	\$49,729.71	\$281.89	\$1.24
Rate of Return on Equity	-11.46%	-11.46%	-11.46%
Net Profit Margin	9.19%	9.19%	9.19%
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income from Operations	\$78,833.28	\$446.86	\$1.97
Net Farm Income	\$85,010.23	\$481.87	\$2.12
Rate of Return on Assets (ROROA)	5.86%	5.86%	5.86%
<i>Economic Depreciation Claimed</i>	\$29,046.41	\$164.65	\$0.73
Rate of Return on Equity	5.17%	5.17%	5.17%
Net Profit Margin	13.38%	13.38%	13.38%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	2.308	2.308	2.308
Asset Turnover (Market Value and Economic)	0.438	0.438	0.438
Basic Cost (both)*	0.630	0.630	0.630
Wages Paid (both)*	0.097	0.097	0.097
Interest Paid (both)	0.055	0.055	0.055
Economic Depreciation	0.059	0.059	0.059
Net Farm Income from Operations (Market Value and Economic)	0.160	0.160	0.160
Cost (Tax) Depreciation	0.101	0.059	0.059
Net Farm Income from Operations (Cost and Tax)	0.118	0.118	0.118
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$83,724.27	\$474.58	\$2.09
Coverage Margin	\$27,916.30	\$158.24	\$0.70
Term Debt Coverage Ratio	1.85	1.85	1.85
Liquidity			
Net Cash Income	\$97,381.96	\$552.00	\$2.43
Working Capital	\$53,500.64	\$303.26	\$1.34
Current Ratio	1.70	1.70	1.70
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$1,108,945.25	\$6,285.94	\$27.69
Beginning Total Farm Liabilities	\$371,284.42	\$2,104.59	\$9.27
Ending Total Farm Assets	\$1,144,630.65	\$6,488.22	\$28.58
Ending Total Farm Liabilities	\$374,997.00	\$2,125.63	\$9.36
Ending Farm Net Worth	\$769,633.65	\$4,362.59	\$19.22
Change in Farm Net Worth	\$31,972.82	\$181.23	\$0.80
Farm Debt to Asset Ratio	0.331	0.331	0.331
Farm Equity to Asset Ratio	0.669	0.669	0.669

* Basic Cost and Wages Paid ratios are combined into an Operating Cost ratio on some financial analysis



Table 3-10
The Average AgFA© Balance Sheet for the 24 Great Lakes Graziers in 2000 with More Than 100 Cows,
Showing Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost Basis</u>	
Current Assets				
Cash Accounts	17,446	20,063		
Prepaid Expenses & Purchased Inventories	21,138	14,832		
Raised Feed Inventories	55,326	59,361		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	30,319	30,774		
Market Livestock & Etc.	4,215	4,585		
Total Current Assets	128,443	129,614		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	253,639	267,886		
Purchased Breeding Livestock	0	0	0	8
Machinery & Equipment	187,664	199,533	11,816	11,606
Buildings	11,042	10,816	11,274	10,294
Land & House	512,181	517,830	56,814	55,165
Other Non-Current Assets	15,976	18,952	6,602	6,202
Total Non-Current Assets	980,502	1,015,017	86,506	83,276
Total Farm Assets	1,108,945	1,144,631		
Current Liabilities				
Accounts Payable	10,010	11,830		
Current Portion of Non-Current Liabilities	32,892	40,456		
Other Current Liabilities	12,906	23,827		
Total Current Liabilities	55,808	76,113		
Non-Current Liabilities				
Intermediate Liabilities	21,486	22,585		
Long-Term Liabilities	293,991	276,298		
Contingent Liabilities	265,537	274,721		
Total Non-Current Liabilities	581,013	573,605		
Total Farm Liabilities	636,821	649,718		
Non-Farm Assets	11,455	12,363		
Non-Farm Liabilities	373	1,151		
Statement of Equities (Net Worth)				
	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>	
Contributed Capital	0	350	350	
Retained Earnings*	97,304	105,429	8,125	
Valuation Adjustment	374,820	389,133	14,313	
Total Farm Equities	472,124	494,912	22,788	
Non-Farm Equities	11,082	11,212	129	
Total Equities	483,207	506,124	22,917	

* All current assets and raised breeding livestock included in retained earnings

XIV. Comparing Seasonal Calving/Milking (Stop Milking at Least One Day Each Year) with Non-Seasonal Herds

Unfortunately for research purposes, less than ten percent of the herds in the study practice seasonal calving/milking. The average seasonal herd (one that stops milking at least one day each year) in the study has 70% more cows which produce about 66% as much milk per cow as the cows in the non-seasonal herds.

The NFIFO per CWT EQ and per cow of the non-seasonal herds is more than twice as high as the NFIFO per CWT EQ and per cow for the seasonal herds. The seasonal herds need more than twice as many cows as needed by the non-seasonal herds to achieve a given amount of total NFIFO. Several years of Wisconsin data show a similar ratio when the NFIFO/cow and the NFIFO/forage acre harvested was used to compare seasonal with non-seasonal herds.

The ratio is less than two to one when comparing the total NFIFO of non-seasonal with seasonal herds. The average seasonal herd in this comparison offsets some of its lower NFIFO per CWT EQ and per cow by having more cows. The total NFIFO ranges from negative to \$78,205 for the seasonal farms in the comparison.

The seasonal herds spend less per CWT EQ for more than half of the basic cost categories compared to the non-seasonal herds. Interestingly enough, the non-seasonal herds spend half as much per CWT EQ for fertilizer and lime but spend \$1.04 more per CWT EQ for purchased feed. Overall, the seasonal herds spend \$1.23 less per CWT EQ for all basic costs. However, the non-seasonal herds have a \$2.11 per CWT EQ advantage in the four cost categories (paid labor, paid management, depreciation and interest) that are added to the basic cost category to create the allocated cost category (allocated costs equals total income minus NFIFO).

Looking in more detail in this category of costs, it can be seen that the non-seasonal graziers have an advantage of \$0.41 per CWT EQ in interest expense, a \$0.44 per CWT EQ advantage in labor expense and a \$1.26 per CWT EQ advantage in depreciation.

The \$2.11 per CWT EQ advantage in the allocated minus basic cost of the non-seasonal herds more than offsets the seasonal herd's total basic cost advantage of \$1.23 per CWT EQ.

This accounts for the \$0.88 per CWT EQ advantage that the non-seasonal herds have in NFIFO per CWT EQ. This result will likely surprise many people since one of the advantages often attributed to seasonal systems is the need for less capital investment which can reduce capital costs. At least on a per CWT EQ basis, that clearly is not the case with the farms in this comparison.

If paid labor and management compensation were added back, the ratio of NFIFO per CWT EQ between the seasonal and non-seasonal herds would narrow as the NFIFO per CWT EQ would increase to \$2.20 for the seasonal and to \$2.60 for the non-seasonal herds. Still, this comparison also raises questions about the perceived advantage in labor efficiency that proponents of seasonal calving/milking claim for such systems.

Table 4-1

Comparing Seasonal with Non-Seasonal Calving/Milking with Non-Seasonal Herds / Most Performance Measures from Tables 4-3 to 4-10	Seasonal	Non-Seasonal	Average
Number of Herds	7	85	92
Number of Cows per Herds	145	85	90
Average Lbs. Milk per Cow	11,667	17,560	16,836
Average Lbs. Milk per Herd	1,691,715	1,496,401	1,511,264
Average Basic Cost per CWT EQ	\$6.73	\$7.96	\$7.83
Allocated Cost per CWT EQ	\$11.46	\$10.58	\$10.67
Allocated Minus Basic Cost per CWT EQ	\$4.73	\$2.62	\$2.84
NFIFO per Cow	\$160	\$398	\$395
NFIFO per CWT EQ	\$0.87	\$1.75	\$1.66
NFIFO per Farm	\$23,202	\$33,913	\$33,098
NFIFO per CWT EQ (without deducting any labor compensation)	\$2.20	\$2.64	\$2.60

Selected Comparisons from Above, Using the Current Market Valuation Method

Table 4-2

	Seasonal	Non-Seasonal	Average
Herds	7	85	92
NFIFO per Cow	\$328	\$527	\$502
NFIFO per CWT EQ	\$1.79	\$2.31	\$2.26

The following tables, 4-3 to 4-10, provide more information about the financial performance of the average seasonal and average non-seasonal herd.



Table 4-3, p.1
Average AgFA© Farm Earnings Report for the Seven Seasonal
(Stop Milking at Least One Day Each Year) Great Lakes Graziers

Income	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	232,989.29	1,606.82	8.78
Raised Non-Breeding Livestock Sales	25,296.00	174.46	0.95
Crop Sales	547.57	3.78	0.02
Distributions Received from Cooperatives	683.00	4.71	0.03
Agricultural Program Payments	18,114.29	124.93	0.68
Custom Hire (Machine Work) Income	304.57	2.10	0.01
Other Income, Incl. Tax Credits, Refunds	9,946.29	68.60	0.37
Basis in Breeding Livestock Sold	(357.14)	(2.46)	(0.01)
Sale of Raised Breeding Livestock	23,027.29	158.81	0.87
Total Cash Income - Basis Adjustments	310,551.14	2,141.73	11.70
Non-Cash Income			
Change in Raised Crop Inventories	321.71	2.22	0.01
Change in Remaining Current Assets	1,156.00	7.97	0.04
Change in Raised Breeding Livestock	15,149.57	104.48	0.57
Total Non-Cash Income	16,627.29	114.67	0.63
Total Income	327,178.43	2,256.40	12.33



Table 4-3, p.2

**Average AgFA® Farm Earnings Report for the Seven Seasonal Great Lakes Graziers
(Stop Milking at Least One Day Each Year)**

Expenses	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Breeding Fees	2,224.86	15.34	0.08
Car and Truck Expenses	625.86	4.32	0.02
Chemicals	1,674.71	11.55	0.06
Custom Hire (Machine Work)	9,771.86	67.39	0.37
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	1,855.43	12.80	0.07
Feed Purchase	47,098.57	324.82	1.77
Fertilizer and Lime	10,646.71	73.43	0.40
Freight and Trucking	1,236.57	8.53	0.05
Gasoline, Fuel, and Oil	5,849.86	40.34	0.22
Farm Insurance	4,118.00	28.40	0.16
Mortgage Interest	22,411.29	154.56	0.84
Other Interest	5,052.14	34.84	0.19
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	33,528.57	231.23	1.26
Rent/Lease Equipment	3,366.86	23.22	0.13
Rent/Lease Other	9,461.57	65.25	0.36
Repairs and Maintenance	18,942.14	130.64	0.71
Seeds and Plants Purchased	1,877.29	12.95	0.07
Supplies Purchased	9,855.86	67.97	0.37
Taxes - Other	9,754.57	67.27	0.37
Utilities	6,321.43	43.60	0.24
Veterinary Fees and Medicine	7,953.57	54.85	0.30
Other Farm Expenses	7,712.14	53.19	0.29
Marketing & Hedging	7,112.29	49.05	0.27
Other Crop Expenses	0.00	0.00	0.00
Other Livestock Expenses	7,407.14	51.08	0.28
Total Cash Expense	235,859.29	1,626.62	8.89
Non-Cash Expenses			
Change in Prepaid Expenses	4,380.14	30.21	0.17
Change in Accounts Payable	1,125.71	7.76	0.04
Machinery, Equipment and Building Depreciation	62,610.86	431.80	2.36
Livestock Depreciation	0.00	0.00	0.00
Total Non-Cash Expenses	68,116.71	469.77	2.57
Total Expenses	303,976.00	2,096.39	11.46
Net Farm Income From Operations (NFIFO)	23,202.43	160.02	0.87
Gain (Loss) on Sale of All Farm Capital Assets	8,871.00	61.18	0.33
Net Farm Income (NFI)	32,073.43	221.20	1.21



Table 4-4, p. 1

The Average ©for the Seven Seasonal (stop milking at least one day each year) Great Lakes Graziers, Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

Income		<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income		327,178.43	19.34	12.33
Expenses		<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost				
Breeding Fees	2,224.86	0.13	0.08	
Car and Truck Expenses	625.86	0.04	0.02	
Chemicals	1,674.71	0.10	0.06	
Custom Hire (Machine Work)	9,771.86	0.58	0.37	
Feed Purchase	47,098.57	2.78	1.77	
Fertilizer and Lime	10,646.71	0.63	0.40	
Freight and Trucking	1,236.57	0.07	0.05	
Gasoline, Fuel, and Oil	5,849.86	0.35	0.22	
Farm Insurance	4,118.00	0.24	0.16	
Marketing & Hedging	7,112.29	0.42	0.27	
Rent/Lease Equipment	3,366.86	0.20	0.13	
Rent/Lease Other	9,461.57	0.56	0.36	
Repairs and Maintenance	18,942.14	1.12	0.71	
Seeds and Plants Purchased	1,877.29	0.11	0.07	
Supplies Purchased	9,855.86	0.58	0.37	
Taxes - Other	9,754.57	0.58	0.37	
Utilities	6,321.43	0.37	0.24	
Veterinary Fees and Medicine	7,953.57	0.47	0.30	
Other Crop Expenses	0.00	0.00	0.00	
Other Livestock Expenses	7,407.14	0.44	0.28	
Other Farm Expenses	7,712.14	0.46	0.29	
Change in Prepaid Expenses	4,380.14	0.26	0.17	
Change in Accounts Payable	1,125.71	0.07	0.04	
Depreciation on Purchased Breeding Livestock	0.00	0.00	0.00	
Total Basic Cost	178,517.71	10.55	6.73	



Table 4-4, p. 2

The Average AgFA© Cost of Production Report for the Seven Seasonal Great Lakes Graziers (Stop Milking at Least One Day Each Year) Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	<u>2000</u>	<u>2000</u>	<u>2000</u>
	per Farm	per CWT Sold	per CWT EQ
Interest Cost			
Mortgage Interest	22,411.29	1.32	0.84
Other Interest	5,052.14	0.30	0.19
Total Interest Cost	27,463.43	1.62	1.03
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	1,855.43	0.11	0.07
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	33,528.57	1.98	1.26
Value of Unpaid Labor & Management	34,350.00	2.03	1.29
Total Labor Cost	69,734.00	4.12	2.63
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	62,610.86	3.70	2.36
Interest on Equity Capital	37,705.58	2.23	1.42
Total Depreciation & Equity Cost	100,316.44	5.93	3.78
Total Expenses	376,031.58	22.23	14.17
Total Income - Total Expenses	(48,853.15)	(2.89)	(1.84)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	303,976.00	17.97	11.46
Net Farm Income from Operations (NFIFO)	23,202.43	1.37	0.87
Gain (Loss) on Sale of All Farm Capital Assets	8,871.00	0.52	0.33
Net Farm Income (NFI)	32,073.43	1.90	1.21



Table 4-5

**The Average AgFA© Financial Measures Report for the Seven Seasonal Great Lakes Graziers
(Stop Milking at Least One Day Each Year)**

	2000	2000	2000
	per Farm	per Cow	per CWT EQ
Profitability (Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income From Operations	\$23,202.43	\$160.02	\$0.87
Net Farm Income	\$32,073.43	\$221.20	\$1.21
Rate of Return on Assets (ROROA)	8.61%	8.61%	8.61%
<i>Cost (Tax) Depreciation Claimed</i>	\$62,610.86	\$431.80	\$2.36
Rate of Return on Equity	3.67%	3.67%	3.67%
Net Profit Margin	7.70%	7.70%	7.70%
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income from Operations	\$47,497.95	\$327.57	\$1.79
Net Farm Income	\$56,368.95	\$388.75	\$2.12
Rate of Return on Assets (ROROA)	4.46%	4.46%	4.46%
<i>Economic Depreciation Claimed</i>	\$38,315.33	\$264.24	\$1.44
Rate of Return on Equity	2.92%	2.92%	2.92%
Net Profit Margin	15.12%	15.12%	15.12%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	1.118	1.118	1.118
Asset Turnover (Market Value and Economic)	0.295	0.295	0.295
Basic Cost (both)*	0.546	0.546	0.546
Wages Paid (both)*	0.108	0.108	0.108
Interest Paid (both)	0.084	0.084	0.084
Economic Depreciation	0.117	0.117	0.117
Net Farm Income from Operations (Market Value and Economic)	0.145	0.145	0.145
Cost (Tax) Depreciation	0.191	0.117	0.117
Net Farm Income from Operations (Cost and Tax)	0.071	0.071	0.071
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$111,052.00	\$765.88	\$4.19
Coverage Margin	\$74,977.15	\$517.08	\$2.83
	2.38	2.38	
Term Debt Coverage Ratio			2.38
Liquidity			
Net Cash Income	\$75,049.00	\$517.58	\$2.83
Working Capital	\$27,798.91	\$191.72	\$1.05
Current Ratio	1.53	1.53	1.53
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$1,080,712.29	\$7,453.19	\$40.73
Beginning Total Farm Liabilities	\$361,228.00	\$2,491.23	\$13.61
Ending Total Farm Assets	\$1,136,667.67	\$7,839.09	\$42.84
Ending Total Farm Liabilities	\$347,928.71	\$2,399.51	\$13.11
Ending Farm Net Worth	\$788,738.95	\$5,439.58	\$29.72
Change in Farm Net Worth	\$69,254.67	\$477.62	\$2.61
Farm Debt to Asset Ratio	0.32	0.32	0.32
Farm Equity to Asset Ratio	0.680	0.680	0.68

* Basic Cost and Wages Paid ratios are combined into an Operating Cost ratio on some financial analysis



Table 4-6

The Average AgFA© Balance Sheet for the Seven Seasonal Great Lakes Graziers in 2000 (Stop Milking at Least One Day Each Year), Showing the Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost Basis</u>	
Current Assets				
Cash Accounts	11,722	7,749		
Prepaid Expenses & Purchased Inventories	15,589	11,209		
Raised Feed Inventories	43,080	43,401		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	6,548	8,357		
Market Livestock & Etc.	10,213	9,559		
Total Current Assets	87,152	80,276		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	211,771	226,921		
Purchased Breeding Livestock	0	0	0	0
Machinery & Equipment	167,868	164,561	29,920	21,229
Buildings	32,143	33,569	50,567	48,048
Land & House	529,423	575,289	106,787	116,847
Other Non-Current Assets	52,355	56,051	22,199	22,237
Total Non-Current Assets	993,561	1,056,392	209,473	208,360
Total Farm Assets	1,080,712	1,136,668		
Current Liabilities				
Accounts Payable	3,631	4,757		
Current Portion of Non-Current Liabilities	30,650	37,933		
Other Current Liabilities	1,794	9,787		
Total Current Liabilities	36,075	52,477		
Non-Current Liabilities				
Intermediate Liabilities	44,086	32,750		
Long-Term Liabilities	281,067	262,701		
Contingent Liabilities	225,648	241,059		
Total Non-Current Liabilities	550,801	536,510		
Total Farm Liabilities	586,876	588,988		
Non-Farm Assets	8,722	10,465		
Non-Farm Liabilities	629	221		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	5,429	17,343	11,914
Retained Earnings*	141,739	150,286	8,546
Valuation Adjustment	346,668	380,051	33,383
Total Farm Equities	493,836	547,680	53,844
Non-Farm Equities	8,093	10,244	2,151
Total Equities	501,929	557,924	55,995

* All current assets and raised breeding are included in retained earnings



Table 4-7, p.1
The Average AgFA© Farm Earnings Report for
the 85 Non-Seasonal Great Lakes Graziers

Income	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	0.00	0.00	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	195,836.47	2,298.07	10.10
Raised Non-Breeding Livestock Sales	3,698.11	43.40	0.19
Crop Sales	908.76	10.66	0.05
Distributions Received from Cooperatives	405.58	4.76	0.02
Agricultural Program Payments	17,438.12	204.63	0.90
Custom Hire (Machine Work) Income	1,724.87	20.24	0.09
Other Income, Incl. Tax Credits, Refunds	3,342.61	39.22	0.17
Basis in Breeding Livestock Sold	(153.53)	(1.80)	(0.01)
Sale of Raised Breeding Livestock	10,890.88	127.80	0.56
Total Cash Income - Basis Adjustments	234,091.87	2,746.99	12.07
Non-Cash Income			
Change in Raised Crop Inventories	1,566.37	18.38	0.08
Change in Remaining Current Assets	225.09	2.64	0.01
Change in Raised Breeding Livestock	3,307.19	38.81	0.17
Total Non-Cash Income	5,098.65	59.83	0.26
Total Income	239,190.52	2,806.82	12.33



Table 4-7, p.2

The Average AgFA© Farm Earnings Report for the 85 Non-Seasonal Great Lakes Graziers

Expenses	<u>2000</u> per Farm	<u>2000</u> per Head	<u>2000</u> per CWT EQ
Cash Expense			
Cost of Items for Resale	0.00	0.00	0.00
Breeding Fees	2,600.35	30.51	0.13
Car and Truck Expenses	267.64	3.14	0.01
Chemicals	2,223.76	26.10	0.11
Custom Hire (Machine Work)	5,852.54	68.68	0.30
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	677.11	7.95	0.03
Feed Purchase	54,562.74	640.28	2.81
Fertilizer and Lime	3,924.94	46.06	0.20
Freight and Trucking	1,036.92	12.17	0.05
Gasoline, Fuel, and Oil	5,882.85	69.03	0.30
Farm Insurance	3,823.89	44.87	0.20
Mortgage Interest	9,781.01	114.78	0.50
Other Interest	2,338.38	27.44	0.12
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	16,671.88	195.64	0.86
Rent/Lease Equipment	247.08	2.90	0.01
Rent/Lease Other	5,157.58	60.52	0.27
Repairs and Maintenance	16,319.61	191.51	0.84
Seeds and Plants Purchased	2,367.89	27.79	0.12
Supplies Purchased	6,185.46	72.58	0.32
Taxes - Other	5,129.53	60.19	0.26
Taxes - Payroll	29.75	0.35	0.00
Utilities	6,491.94	76.18	0.33
Veterinary Fees and Medicine	5,375.01	63.07	0.28
Other Farm Expenses	4,598.66	53.96	0.24
Marketing & Hedging	10,856.42	127.40	0.56
Other Crop Expenses	96.22	1.13	0.00
Other Livestock Expenses	8,050.15	94.47	0.41
Total Cash Expense	180,549.33	2,118.68	9.31
Non-Cash Expenses			
Change in Prepaid Expenses	1,955.04	22.94	0.10
Change in Accounts Payable	1,320.98	15.50	0.07
Machinery, Equipment and Building Depreciation	21,419.65	251.35	1.10
Livestock Depreciation	32.94	0.39	0.00
Total Non-Cash Expenses	24,728.60	290.18	1.27
Total Expenses	205,277.93	2,408.87	10.58
Net Farm Income from Operations (NFIFO)	33,912.59	397.95	1.75
Gain (Loss) on Sale of All Farm Capital Assets	1,896.69	22.26	0.10
Net Farm Income (NFI)	35,809.29	420.21	1.85



Table 4-8, p. 1

The Average AgFA© Cost of Production Report for the 85 Non-Seasonal Great Lakes Graziers,
Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

Income	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Total Income	239,190.52	15.98	12.33
Expenses	<u>2000</u> per Farm	<u>2000</u> per CWT Sold	<u>2000</u> per CWT EQ
Basic Cost			
Breeding Fees	2,600.35	0.17	0.13
Car and Truck Expenses	267.64	0.02	0.01
Chemicals	2,223.76	0.15	0.11
Custom Hire (Machine Work)	5,852.54	0.39	0.30
Feed Purchase	54,562.74	3.65	2.81
Fertilizer and Lime	3,924.94	0.26	0.20
Freight and Trucking	1,036.92	0.07	0.05
Gasoline, Fuel, and Oil	5,882.85	0.39	0.30
Farm Insurance	3,823.89	0.26	0.20
Marketing & Hedging	10,856.42	0.73	0.56
Rent/Lease Equipment	247.08	0.02	0.01
Rent/Lease Other	5,157.58	0.34	0.27
Repairs and Maintenance	16,319.61	1.09	0.84
Seeds and Plants Purchased	2,367.89	0.16	0.12
Supplies Purchased	6,185.46	0.41	0.32
Taxes - Other	5,129.53	0.34	0.26
Utilities	6,491.94	0.43	0.33
Veterinary Fees and Medicine	5,375.01	0.36	0.28
Other Crop Expenses	96.22	0.01	0.00
Other Livestock Expenses	8,050.15	0.54	0.41
Other Farm Expenses	4,598.66	0.31	0.24
Change in Prepaid Expenses	1,955.04	0.13	0.10
Change in Accounts Payable	1,320.98	0.09	0.07
Cost of Items for Resale	0.00	0.00	0.00
Taxes - Payroll	29.75	0.00	0.00
Depreciation on Purchased Breeding Livestock	32.94	0.00	0.00
Total Basic Cost	154,389.91	10.32	7.96



Table 4-8, p. 2

The Average AgFA© Cost of Production Report for the 85 Non-Seasonal Great Lakes Graziers, Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details

	<u>2000</u>	<u>2000</u>	<u>2000</u>
	per Farm	per CWT Sold	per CWT EQ
Interest Cost			
Mortgage Interest	9,781.01	0.65	0.50
Other Interest	2,338.38	0.16	0.12
Total Interest Cost	12,119.39	0.81	0.62
 Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	677.11	0.05	0.03
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	16,671.88	1.11	0.86
Value of Unpaid Labor & Management	37,008.75	2.47	1.91
Total Labor Cost	54,357.74	3.63	2.80
 Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	21,419.65	1.43	1.10
Interest on Equity Capital	20,895.22	1.40	1.08
Total Depreciation & Equity Cost	42,314.87	2.83	2.18
Total Expenses	263,181.91	17.59	13.57
Total Income - Total Expenses	(23,991.39)	(1.60)	(1.24)
 Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs (Total Income - NFIFO)	205,277.93	13.72	10.58
Net Farm Income from Operations (NFIFO)	33,912.59	2.27	1.75
Gain (Loss) on Sale of All Farm Capital Assets	1,896.69	0.13	0.10
Net Farm Income (NFI)	35,809.29	2.39	1.85



Table 4-9

The Average AgFA© Financial Measures Report for the 85 Non-Seasonal Great Lakes Graziers

	2000	2000	2000
	per Farm	per Cow	per CWT EQ
Profitability (Assets at Cost and Cost (Tax) Depreciation)			
Net Farm Income from Operations	\$33,912.59	\$397.95	\$1.75
Net Farm Income	\$35,809.29	\$420.21	\$1.85
Rate of Return on Assets (ROROA)	9.80%	9.80%	9.80%
<i>Cost (Tax) Depreciation Claimed</i>	\$21,452.59	\$251.74	\$1.11
Rate of Return on Equity	1.83%	1.83%	1.83%
Net Profit Margin	4.57%	4.57%	4.57%
Profitability (Assets at Market Value and Economic Depreciation)			
Net Farm Income from Operations	\$44,882.51	\$526.68	\$2.31
Net Farm Income	\$46,779.20	\$548.94	\$2.41
Rate of Return on Assets (ROROA)	3.68%	3.68%	3.68%
<i>Economic Depreciation Claimed</i>	\$10,482.67	\$123.01	\$0.54
Rate of Return on Equity	2.34%	2.34%	2.34%
Net Profit Margin	9.15%	9.15%	9.15%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover (Cost and Tax)	2.146	2.146	2.146
Asset Turnover (Market Value and Economic)	0.402	0.402	0.402
Basic Cost (both)*	0.645	0.645	0.645
Wages Paid (both)*	0.073	0.073	0.073
Interest Paid (both)	0.051	0.051	0.051
Economic Depreciation	0.044	0.044	0.044
Farm Income from Operations (Market Value and Economic)	0.188	0.188	0.188
Cost (Tax) Depreciation	0.090	0.044	0.044
Net Farm Income from Operations (Cost and Tax)	0.142	0.142	0.142
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$35,109.84	\$412.00	\$1.81
Coverage Margin	\$7,195.82	\$84.44	\$0.37
Term Debt Coverage Ratio	1.64	1.64	1.64
Liquidity			
Net Cash Income	\$53,696.07	\$630.11	\$2.77
Working Capital	\$28,688.34	\$336.65	\$1.48
Current Ratio	1.83	1.83	1.83
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$582,338.44	\$6,833.54	\$30.02
Beginning Total Farm Liabilities	\$173,059.32	\$2,030.79	\$8.92
Ending Total Farm Assets	\$607,483.93	\$7,128.62	\$31.32
Ending Total Farm Liabilities	\$180,954.08	\$2,123.43	\$9.33
Ending Farm Net Worth	\$426,529.85	\$5,005.18	\$21.99
Change in Farm Net Worth	\$17,250.72	\$202.43	\$0.89
Farm Debt to Asset Ratio	0.298	0.298	0.298
Farm Equity to Asset Ratio	0.702	0.702	0.702

* Basic Cost and Wages Paid ratios are combined into an Operating Cost ratio on some financial analysis



Table 4-10

The Average AgFA© Balance Sheet for the 85 Non-Seasonal, Great Lakes Graziers in 2000 Showing the Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Historic Cost Basis</u>	
Current Assets				
Cash Accounts	9,428	10,876		
Prepaid Expenses & Purchased Inventories	9,917	7,962		
Raised Feed Inventories	27,765	29,331		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	13,957	14,192		
Market Livestock & Etc.	1,003	994		
Total Current Assets	62,069	63,354		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	132,184	135,491		
Purchased Breeding Livestock	0	0	0	16
Machinery & Equipment	102,689	110,281	7,316	6,876
Buildings	13,982	14,216	6,310	6,316
Land & House	258,250	269,110	30,835	30,882
Other Non-Current Assets	13,164	15,032	4,515	4,417
Total Non-Current Assets	520,269	544,130	48,976	48,507
Total Farm Assets	582,338	607,484		
Current Liabilities				
Accounts Payable	4,379	5,700		
Current Portion of Non-Current Liabilities	16,718	19,167		
Other Current Liabilities	6,817	9,798		
Total Current Liabilities	27,914	34,665		
Non-Current Liabilities				
Intermediate Liabilities	8,634	8,769		
Long-Term Liabilities	136,511	137,520		
Contingent Liabilities	138,044	144,218		
Total Non-Current Liabilities	283,189	290,507		
Total Farm Liabilities	311,103	325,172		
Non-Farm Assets	12,033	12,324		
Non-Farm Liabilities	2,864	2,991		
Statement of Equities (Net Worth)				
	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>	
Contributed Capital	0	0	0	
Retained Earnings	70,170	66,397	-3,772	
Valuation Adjustment*	201,066	215,914	14,848	
Total Farm Equities	271,235	282,312	11,076	
Non-Farm Equities	9,169	9,334	165	
Total Equities	280,404	291,645	11,241	

* All current assets and raised breeding livestock included in retained earnings

Appendix 1

The Agriculture Financial Advisor (AgFA[®]) program has been developed to assist in the collection, analysis, and storage of financial data and certain farm profile information from all farm types. Dr. Gary Frank, Randy Gregory, and George Rice and University of Wisconsin's Farm Management Education Team, are the developers. Several attributes built into AgFA[®] are similar to attributes of other farm financial computer programs. :

In addition, AgFA[®] is set apart from many other computer programs for working with farm data by:

- Allowing for use of the profile data to create specific farm type benchmarks and provide other information to assist farm managers in decision-making for improved profits and lifestyles.
- Allowing data to be keyboard entered into a Windows style input form or electronically transferred from accounting software or other electronic records.
- Allowing licensed users to enter data and receive reports on their own desktop computer or via their own Internet connected computer.
- Allowing each user to obtain summaries (via the Internet) of their group's data and summaries of the entire AgFA[®] data set. The group reports are in the same format as individual reports. Both types can have three years of data on the same report. *Note: groups of less than six users will not be summarized as a method of protecting the **confidentiality** of individual farm's data.*
- Rapid sorting and calculating of a group's financial information. As soon as a user enters a new farm's financial data, the user can obtain an analysis of their group that includes the new farm (if there are six or greater farms in the identified group).
- Built-in statistical analysis for research purposes
- For more information about AgFA[®], contact at the UW Center for Dairy Profitability, 1675 Observatory Drive, Madison, WI, (608) 263-5665.



Cost of Producing Milk per Hundredweight Equivalent

Prepared by Gary Frank, Center for Dairy Profitability – Madison, WI

Work Sheet:	An Example Farm	Your Farm
1. Total Schedule F Income <small>(Schedule F, line 11)</small>	\$126,161	_____
2. Form 4797 Income ¹	\$ 12,143	_____
3. Change ² in Feed Inventory	-\$ 4,127	_____
4. Change ² in Dairy Livestock Inventory	\$ 10,500	_____
5. Change in Acc. Rec. Other Lst Inv., Etc.	\$0	_____
6. Total Farm Income <small>(On this worksheet, add lines 1 through 5.)</small>	\$144,677	_____
7. Average Milk Price ³ <small>Use \$14.94 when calculating 2001 cost of production.</small>	\$ 12.86	_____
8. Hundredweight Equivalents (CWT EQ) of Milk Produced Critical Value⁴ <small>(On this worksheet, divide line 6 by line 7)</small>	11,250	_____
9. Total Schedule F Expenses <small>(Schedule F, line 35)</small>	\$122,521	_____
10. Change ² in Accounts Payable	\$ 1,543	_____
11. Change ² in Prepaid Expenses	\$ 1,200	_____
12. Total Allocated Costs <small>(On this worksheet, add lines 9 and 10, then subtract line 11)</small>	\$122,864	_____
13. Total Interest Paid <small>(Add Schedule F lines 23a and 23b)</small>	\$ 8,470	_____
14. Wages and Benefits Paid <small>(Only those reported on Schedule F; to obtain this value add Schedule F lines 17, 24, and 25)</small>	\$ 12,682	_____
15. Depreciation Claimed <small>(Schedule F line 16 minus Depr. claimed on livestock)</small>	\$ 15,346	_____
16. Total Basic Costs <small>(On this worksheet, line 12 minus lines 13, 14, and 15)</small>	\$ 86,366	_____
17. Basic Cost per CWT EQ ⁵ <small>(On this worksheet, line 16 divided by line 8)</small>	\$7.68	_____
18. Total \$'s available for other costs ⁶ <small>(On this worksheet, line 6 minus line 16)</small>	\$58,311	_____
19. Basic Cost Margin per COW <small>(On this worksheet, divide line 18 by average number of cows, both milking and dry, in herd.)</small>	\$1,166	_____
20. Total Allocated Costs per CWT EQ <small>(On this worksheet, divide line 12 by line 8)</small>	\$10.92	_____
21. Total \$ available to cover unallocated costs ⁷ <small>(On this worksheet, (line 7 minus line 20) times line 8)</small>	\$21,825	_____
22. Unpaid labor & management charge per CWT EQ <small>(Unpaid labor & management charge divide by line 8) (In this example, the opportunity cost of all family labor & management was set at \$35,000. This minus wages paid to family members of \$12,682 = \$22,318. This divided by line 8 equals \$1.98.)</small>	\$1.98	_____
23. Total Allocated plus unpaid labor & management <small>(On this worksheet, add lines 20 and 22.)</small>	\$12.90	_____

Goal <= \$8.00

Goal => \$1,200

Goal <= line 7

The footnotes are on the back of this page.

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Footnotes

- ¹ When Form 4797 contains only income from the sale of culled raised dairy livestock, enter the income reported. If it contains the sale of purchased dairy livestock and the "one-time" sale of some other asset(s), such as an old plow adjustments must be made.
- Note: in the case of the "one-time" sale, that income must be subtracted from the Total Form 4797 income before a value is entered. In the case where purchased breeding livestock are included, enter the net amount. This net will take into account the unrecovered basis that was claimed against this sale.
- ² Change equals the ending amount minus the beginning amount. The best way to get this value is to ask yourself if there was any change in this item during the year in question. If the answer is "yes" then follow with the question, "how much?" This method avoids having to determine the absolute inventory level at the beginning and end of the year in question.
- ³ If you wish to compare your costs to the costs on other farms, use the U.S. average all milk price for the year in question. It was \$13.68, \$12.24, \$13.09, \$12.80, \$12.97, \$12.74, \$14.88, \$13.34, \$15.43, \$14.37, \$12.33 and \$14.94 (est.) in 1990 - 2001, respectively. Or you can divide your total milk income (before any deductions for hauling, marketing, etc.) by the number of hundredweight of milk you sold during the year to calculate the average milk price on your farm. However, then you can only accurately compare your costs this year to your costs in previous years.
- ⁴ The Critical Value should be divided into the total cost of an expense item to obtain its Cost of Production per Hundredweight Equivalent (CWT EQ). Example, your purchased feed costs are \$34,871 and you Critical Value is 12,842. Then, your purchased feed costs are \$2.72 ($34871 / 12842$) per CWT EQ. You can then compare your costs to those on the tables.
- ⁵ The average Basic Cost on selected Wisconsin dairy farms was \$7.54, \$7.68, \$7.11, \$7.41, \$8.55, \$7.86, \$8.23, \$7.72, and \$7.75 in 1992-2000, respectively. Farmers should calculate this value each year to monitor changes in their basic production costs. This value allows farm managers to compare their cost to previous years, other dairy businesses, and the price without regard to herd size, production level, debt position, and percent of total labor paid. See Managing the Farm Vol. 28 No. 1&2 for more information.
- ⁶ The "other" cost items are: Interest (both that actually paid and the opportunity cost interest on your equity in the business), Capital Consumed (reduction in the value of your machinery, equipment, etc. caused by using it and/or by it becoming obsolete), Labor and Management Paid, and the Opportunity Cost of Unpaid Labor and Management. Any return above all these costs is an economic profit.
- ⁷ Unallocated costs, for most farm managers, are their (and their family's) Labor and Management plus a Return to Equity Capital. However, some farm managers pay their family members (or themselves) some wages and benefits that are deductible on Schedule F. In those cases, this margin will not be as large as when the return to the entire farmer's (and family's) labor, management, and equity capital are imbedded in it.
- In the example, the farm's margin available for unallocated costs is \$21,825; this is not the return to the farmer's (and family's) Labor, Management, and Equity Capital. The Return to Labor, Management, and Equity Capital is the amount calculated above plus the Wages and Benefits paid to family members. In the example, if all the Wages and Benefits paid were to family members, the total return to their Labor, Management, and Equity Capital is \$34,507 (\$21,825 plus \$12,682).

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Selected Acronyms, Definitions and Terms

AgFA[®] - Agricultural Financial Advisor[®]

CCC - Commodity Credit Corporation

CMV - Current Market Value Asset Valuation Method

COP - Cost of Production

CWT EQ- per hundredweight equivalent of milk sold is an indexing procedure which focuses on the primary product that is sold and standardizes farms in terms of milk price and many other variables for analysis purposes.

GLGN - Great Lakes Grazing Network

HC - Historic Cost asset valuation method

IFAS - Initiative for Future Agricultural and Food Systems (the name of the class of grant from the USDA that is supporting the project)

MIRG - Management Intensive Rotational Grazing

NFI - Net Farm Income represents the returns to unpaid labor, management, and equity capital invested in the business.

NFIFO - Net Farm Income from Operations represents the returns to unpaid labor, management, and equity capital invested in the business. NFIFO excludes income from unusual capital item sales.

ROROA - Rate of Return on Assets can be thought of as the average interest rate being earned on all investments in the farm or ranch business. If assets are valued at market value, the rate of return on assets can be looked at as the “opportunity cost” of farming versus alternate investments. If assets are valued at cost value, the rate of return on assets more closely represents the actual return on the average dollar invested in the farm. The rate of return on farm assets is calculated as follows: $\text{Rate of Return on Assets} = \frac{\text{Return on Farm Assets}}{\text{Average Farm Investment}}$, where: $\text{Return on Farm Assets} = \frac{\text{Net Farm Income} + \text{Farm Interest} - \text{Value of Operator's Labor \& Management}}{\text{Average Farm Investment}}$ and $\text{Average Farm Investment} = \frac{\text{Beginning Total Farm Assets} + \text{Ending Total Farm Assets}}{2}$.

ROROE - Rate of Return on Equity represents the interest rate being earned on your farm net worth. If assets are valued at market value, this return can be compared to returns available if the assets were liquidated and invested in alternate investments. If assets are valued at cost value, this more closely represents the actual return on the funds that have been invested or retained in the business. The rate of return on the farm equity is calculated as follows: $\text{Rate of Return on Equity} = \frac{\text{Return Farm Equity}}{\text{Average Farm Net Worth}}$, where: $\text{Return on Farm Equity} = \frac{\text{Net Farm Income} - \text{Value of Operator's Labor \& Management}}{\text{Average Farm Net Worth}}$ and $\text{Average Farm Net Worth} = \frac{\text{Beginning Farm Net Worth} + \text{Ending Farm Net Worth}}{2}$.

Seasonal calving/milking- A calving strategy in which the dry period of all the cows in the herd overlap enough to shut down the milking facility for more than a day and preferably for at least a few weeks each year for a period of consecutive years. Any calving strategy not meeting the preceding seasonal definition is referred to as **non-seasonal** in this analysis.

USDA - United States Department of Agriculture