



DAIRY GRAZING FARMS FINANCIAL SUMMARY:

Regional/Multi-State Interpretation of Small Farm Data

Fourth Year Report

Data from 2003, 2002, 2001, and 2000

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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 improve and protect 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 also cooperating in this financial summary project as well. Data from additional states with similar climates 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
Fourth Year Report on 2003 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 graziers (102 in 2003, 103 in 2002, 126 in 2001, and 92 in 2000) in the Great Lakes region provides some insight into the economics of grazing as a dairy system in the northern U.S.

Insights include:

- A comparison between the most profitable half and the least profitable half shows a large range in financial performance. The difference between the higher and lower profit farms was greater in the years with lower milk prices (see chapter XIII).
- The average grazing herd with less than 100 cows had a higher Net Farm Income from Operations (NFIFO) per Cow and per Hundredweight Equivalent (CWT EQ) than the average grazing herd with 100 cows or more. The smallest margin appeared in the 2003 data (see Chapter XIV).
- Careful examination of the data suggests that achieving a given level of NFIFO per Cow or per CWT EQ is more difficult in a seasonal (stop milking at least one day each calendar year) system. Non-seasonal herds had a large NFIFO per Cow and per CWT EQ advantage in 2000 and 2002. Seasonal herds had a large NFIFO per Cow and per CWT EQ advantage in 2001 and a small advantage in 2003. The seasonal group had a smaller range of financial performance within a year but experienced more variability of financial performance from year to year. Less than 15 percent of the herds in the data are seasonal (see Chapters XV and XVI).
- The average grazer had a higher NFIFO per Cow and NFIFO per CWT EQ than their confinement counterparts in all years in New York and Wisconsin – the only two states with the necessary data for this comparison (see Chapters VI and XVII).
- The breed of cattle is probably a minor factor among the many variables affecting the profitability of dairy farms. However, because it is an easily recognized variable and one of great producer interest, the profitability of herd by breed was examined. In three consecutive years, herds categorized as Holstein had higher levels of NFIFO/Cow and NFIFO/CWT EQ than herds of other breeding (see Chapter XVIII).

The study 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.

This fourth year report of the project expands the scope of previous reports. Most of the comparison groupings in this report have several pages of tables to show:

- The Farm Earnings report with the per Farm, per Cow and per CWT EQ (see Chapter X).
- The Cost of Production report with the per Farm, per CWT Sold, and per CWT EQ.
- The Financial Measures report (**Page one uses cost values. Page two uses market value.**)
- The Balance Sheet report.

To more accurately compare your cost of production, it is recommended that you also calculate your cost of production using the per hundredweight equivalent of milk sold (CWT EQ) method. ²

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@wisc.edu, by writing the UW Center for Dairy Profitability, 277 Animal Science Building., 1675 Observatory Drive, Madison, WI 53706 or by visiting <http://cdp.wisc.edu>. This report is the fourth year report of the Regional Multi-State Interpretation of Small Farm Financial Data USDA IFAS grant project. See Appendix 3 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, see Chapter X and consult *Cost of Production Versus Cost of Production*, Dr. Gary Frank, UW Center for Dairy Profitability, 1997.

Calculating your cost of production using the per CWT EQ method can be done by inputting farm data into AgFA©. See Appendix 1 for more information about using AgFA©. Appendix 2 is 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 Initiative for Future Agricultural and Food Systems Grant, ten states and one province have standardized data handling and analysis procedures in order to combine actual farm financial data and a limited amount of production data to provide financial benchmarks to help farm families and their communities be successful and sustainable. A small amount of data has been gathered from additional states.

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 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 multiple needs to 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

A relatively new computer program called Agricultural Financial Advisor (AgFA©) is used to analyze the data. See Appendix 1 for more information about AgFA©.

The 2003 data was collected from a total of 114 grazing dairy farms. All have been analyzed; however, 12 of them were incomplete, so data from 102 farms was summarized. One of the valuable lessons reinforced by this project is that accounting methodology is important both in standardization and in the accuracy of financial comparisons of businesses. The 2002, 2001, and 2000 reports summarized data from 103, 126, and 92 graziers respectively.

Readers of this report may notice that when the 102 graziers are sorted into groups for comparison purposes, the number in one comparison group adds up to less than 102. The “top half” group has 50 farms while the bottom half group has 50 farms. Fifty plus fifty is less than 102. What happened to the other two? Most data sets have a range in values. AgFA© looks at the specific distribution of values in a comparison and sometimes omits a small number of the most extreme observations. That is, some farms have numbers that are outside of an expected range and those farms are omitted from that summary.

This fourth year report of the project expands the scope of previous reports. Most of the comparison groupings in this report have several pages of tables to show:

- The Farm Earnings report with the per Farm, per Cow and per CWT EQ (see Chapter X).
- The Cost of Production report with the per Farm, per CWT Sold, and per CWT EQ.
- The Financial Measures report. **(Page one uses cost values. Page two uses market value.)**
- The Balance Sheet report.

There is an 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 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.⁴

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

⁵ If you would like to participate in the study, refer to Appendix 3 for contact information for your state or provincial representative.

V. Case Farm Reports from Illinois and Wisconsin

Not all graziers are created equal; consequently, there may not be a typical grazier. However, it may still be instructive to have a more personal glimpse of 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 that one farm is located on some of the most agriculturally productive land in the world in a non-dairy area. The other is right next to a growing community in a very dairy area. One started on the road to the large modern confinement system.

Both switched to grazing after years of operating as traditional confinement dairy farms. Both farms have been in the family for more than one generation. An interesting feature of the Wisconsin case farm is that the current operators have provided the opportunity for others to get started in farming. Among the most important characteristics that both farms share is their success and satisfaction from their decision to operate a grazing dairy farm. They are commended for sharing their stories with others.

CASE STUDIES

The Dave and Susan Surprenant Case Farm from Illinois ⁵

Manteno, Illinois – This should work. It really should.

If well-managed grass is indeed the most valuable crop that a skilled grazier can grow for his or her animals and dairy grazing can produce the most income per acre this side of a high-value specialty crop, then why shouldn't we be putting cows on 180-bushel corn ground? Why not grow grass and manage a milking herd on the exceptionally deep and fertile soils built by the tall grass prairies of what is now known as Illinois?

Why not, indeed, figures David Surprenant. To this guy, hills are for sheep, and dairy cows should be grazed on deep, level ground as they are in New Zealand and Ireland.

David has some numbers to lend credence to his point. After three years of being a pretty inept grazier (by his own admission), the last nine years of serious grazing, have certainly improved his financial performance and lifestyle. He pays more income tax than he used to and he has reduced his debt from \$1644 per Cow down to under \$500 per Cow. He has also survived the destruction of two buildings by a storm and back-to-back drought years.

In 2004, David grazed 160 Holstein milk cows and about 150 head of young stock from April 1 to the end of November (with additional supplemental forage during the first month and the last two) on 120 acres, plus another 40 acres of late season grazing on an adjacent hayfield. All hay and haylage needs come from the pasture ground, plus 40 acres of alfalfa on the far side of a creek. He rents 75 acres for corn silage.

He may have gotten a little bigger than he wants to be. He finds that it is a challenge to maintain a good sod cover on his level land with the increased traffic pressure created by larger cow numbers.

He also grew in part to be able to justify having a full-time hired person to make it easier to get time off for family events and vacations. Dave had a good hired person for awhile until that person went out on his own. Now Dave is beginning to scale back a bit so that the work can be completed by family and part-time labor.

Sure, there's validity to arguments that labor, weather and cow performance can get in the way of plans that look great on paper. And David is paying below-market rent to his mother on land that would likely rent for \$125/acre and sell for more than \$5,000. In other words, it might be tough for someone to go onto this kind of ground, start a grazing dairy from scratch, and actually *produce* the sort of returns that David envisions. But let's address that later.

First, let's set the scene. Drive south from the southern Chicago suburbs, past the subdivisions and the dairy-farms-turned-horse-ranches, and get out into the countryside 50 miles south of the city. What you see is corn and beans, beans and corn – mile after mile after mile. You might see a couple of lonely alfalfa fields, but that's about it.

Until you get to David and Susan Surprenant's place, an island of grass amid the sea of row crops. Around here, milk cows are almost as rare as managed grazing. "Farming" has become a ride in an air-conditioned cab, with cash-croppers depending on government checks to nudge per-acre profits up to \$14 (the net-margin average according to several years survey of Illinois grain operations with more

⁵ Reprinted with updates and with permission from the January 2001 issue of *Graze* magazine.

than 250 acres). The monoculture is so pervasive that David can't even find anyone to cut hay or chop corn silage.

While it's an atypical grazing setting, this is a fairly typical grazing story. David took over the dairy herd here in the late 1970's, starting with 20 cows. Margins with farming an alfalfa-corn rotation were OK for awhile, but got tighter as the years went on, even as the DHIA average climbed above 20,000 pounds. By the early '90s, David was working very hard at milking more than 70 Holsteins – and running negative margins to boot. University of Illinois dairy scientist Mike Hutjens was telling him he had to go up to 175 cows if he was going to cash flow.

And that was that. David did some reading, started doing some talking to grazing mavericks, and decided to fence his alfalfa fields and start grazing his cows in 1993.

Many hillside graziers would love to have this layout: 160 acres of deep, fertile, tiled ground in a single quarter-section, all on one level. But working with this farm almost wrecked his dairying career, because David had no idea of how to convert his land and cows to grazing.

He made some classic beginner mistakes. David surface-seeded 40 acres of alfalfa with a feed mill "pasture" mix containing an unknown potpourri of seeds, but certainly orchardgrass and infected tall fescue. Alfalfa grows well here, but a "grazing" alfalfa didn't pan out. He hired a well-known grazing consultant, whose primary message was to "plant only fence posts."

"That was terrible advice," David laments. "You have to have the grass out there in the first place."

He didn't install any improved lanes, which proved to be a bad idea for a farm that becomes a two-inch deep pond the day after a two-inch rain. When he did bring in a grader to build up lanes, a money shortage forced caused him to cover the three-inch rock base with only a thin layer of limestone screenings. Foot problems were soon rampant in the herd.

The so-called "pasture" was thin, the cows were causing more damage than good, and the grass stopped growing at the first hint of dry weather. The Holsteins were lame, dirty and hungry. The herd average plummeted 5,000 pounds over a two-year period. "We were hurting production, because we thought there was a lot more dry matter out there than there really was," David explains. He was still trying to run a conventional cropping system alongside his unproductive pastures. The money was still going out faster than it was coming in.

Then Susan lost her off-farm job. With two boys (Brendan, now 15, and Christopher, 9) to raise, David had a decision to make: quit, or get serious about grazing. "There was a lot of soul searching, a lot of asking 'what are we doing?'" David recalls. "'96 was the year I decided to stop farming, stop spending money, and make the commitment to grazing."

Some of what happened next was already coming naturally. The pastures were starting to develop a sod cover that could support Holsteins in fairly wet weather. The cows were beginning to adjust to grazing, and for the first time David was able to expand his herd without buying cattle.

But everything else was improved management. David bought an electronic pasture probe, started walking his pastures every few days, and began training himself to judge pasture-grass quality and quantity. He started applying nitrogen, and began inter-seeding with ryegrass and improved white clover.

David cut back on grain feeding. Feeding 20 pounds of corn in two daily feedings was causing problems – especially for Holsteins that weren't eating the assumed pasture forage. Today, he refuses to offer more than seven pounds of grain in one slug. David also assumes that, even during the peak pasture season, his Holsteins can't be trusted to consume more than 24 pounds of daily pasture dry matter.

Using Michigan State University's "Spartan" program, he supplements with about 8 pounds of finely ground corn, two pounds of soybean oil meal, up to 42 pounds of as fed corn silage and a half pound of a mineral mix. They're fed in a barnyard bunk and, in the fall, under a paddock wire from an old silage wagon as a sort of poor-man's TMR. Cows are also offered free-choice round bales of hay in the barnyard at milking time. So, pasture never makes up more than about 50% of the total ration. More haylage and corn silage are added to the ration as grass growth declines.

David breeds artificially for three weeks before releasing the bulls. He stopped using DHIA. He spent \$42,000 to install a double-10, low line parlor in his stanchion barn. Modeled on a facility that the Crave brothers designed for their big confinement dairy in southern Wisconsin, the 70-degree "parabone" parlor features a curved breast rail and individual manure shields for indexing. It's a one-person parlor, allowing David to tend to other matters each afternoon while one of his part-time helpers, Brad Weber, Stephen Smith or Vinny Ferreira, milks the cows.

Lo and behold, it all started coming together. The milk-shipped average leveled off, and went up about a thousand pounds (to slightly above 16,000 pounds). Herd health improved, cull rates dropped,

and cow numbers exploded without any purchased animals. The hard, physical labor was mostly gone, and eldest son Brendan started gaining an interest in calves, pastures – and dairying in general.

“I’m having fun, and I want to continue having fun,” David says.

Not that the Surprenants don’t face serious issues. A hot, dry summer will challenge the two cows per acre theory – especially if ryegrass and white clover become the pasture mainstays.

David says his Holsteins just aren’t cut out for top productivity in this system. They don’t graze well enough. They don’t breed well enough. Since 2000, he has calved three quarters of the herd in the spring, and the rest during the falls months. David has used New Zealand Holstein genetics and plans to use some Swedish Red and Milking Shorthorn genetics.

A growing number of fall calvers could cause major problems here, because the free stall barn holds 115 milking cows. The mild winters of recent years have allowed David to out-winter dry cows and heifers with few problems despite having little shelter from prairie winds. With 150 cows milking into early January, some milkers are forced to spend time outdoors. So far, frostbite and winter stress problems haven’t shown up.

But the winters obviously can get a lot tougher. Meanwhile, wintertime nutrient loading on paddocks near the buildings could become a serious problem. One possible solution: build a relatively inexpensive canvas “hoop shed” near the barnyard.

But labor involved with handling manure is a concern even with a new barn. “Labor,” David says, “is my biggest potential downfall. We’re still working harder than we’d like, but in contrast to pre-grazing years, the family is being rewarded well financially. Working too hard is also somewhat self imposed. The work load could be reduced quickly by giving up the 75 acres of rented land. Because competition for land is fierce in Dave’s neighborhood, Dave is reluctant to give up the rented land. If his sons continue to show interest in the farm, they will provide extra labor and in turn will want the larger herd size to generate the desired level of income for all. In such a case they will be glad to have the extra 75 acres. Brendan is showing signs of wanting to dairy, but will that continue? David, who is 48 years old, says there’s a chance he could ditch his growth strategy, and instead cut back to around 125 cows.

Back to the initial question: Does it make sense to graze cows on this kind of land? It may be a moot point, because cows certainly require more labor than combines, and Uncle Sam seems intent on subsidizing grain farms in Illinois.

David even acknowledges that “there’s been many times when I wished I had a hillier farm.” Yet he argues that a well-run grazing dairy here can make good money with low milk prices.

And someday, the federal government may just decide that giving billions of dollars to grain farmers is a colossal waste of money. What would happen to land costs at that point, and how would the economics of grass-dairy on the Illinois prairie be viewed?

If nothing else, it’s an interesting thought.

The Jerold and Janice Berg Case Farm From Wisconsin⁶

In 1958, shortly after graduating from the Farm and Industry Short Course at the University of Wisconsin – Madison, Jerold Berg started farming in partnership with his father. They were milking about 45 cows when Jerold became a partner. The herd grew slowly but steadily during the partnership to its current size of about 70. In 1971, Jerold's father retired from farming and soon thereafter Jerold and his wife began making some changes in the operation of this farm that will attain Century Farm Status in 2005.

For many years, Jerold and his wife Janice operated a traditional confinement operation on their rolling 296 owned and 50 rented acres near Cascade, Wisconsin (between Lake Michigan and Lake Winnebago). They raised most of the grain and forage consumed by their cows and built a Harvestore silo for additional feed storage. The cows were milked in a stanchion barn (still are) and in 1972 they added a free stall barn with a slatted floor for manure storage.

They raised two sons. The oldest son, David, farmed with his parents before passing away recently. Daniel, the younger son, obtained his Masters Degree in Food Science in 2002 and works for A.E. Staley Company in Decatur, Illinois. The Bergs were doing well.

In one particular way the Berg farm is not a stereotypical Wisconsin dairy farm. During most of these years, it has been a single family sized farm that has supported 2 or more families. The Bergs have provided the opportunity for several people to start in farming. Not all of them have leveraged the opportunity into a farming career. Some learned in the process that farming wasn't for them.

The first one was hired when Jerold's dad retired in 1971. This person decided to keep working for Jerold and is now in semi-retirement, helping out on the farm when needed. The next two stayed a short time before deciding that farming wasn't what they expected. The fourth was working into the operation for about six years before deciding not to farm. For the last year, a young couple who graduated from the Wisconsin School for Beginning Dairy Farmers has been working to gain equity in the dairy herd. Jerold also has plans to hire an intern from the Wisconsin School for Beginning Dairy Farmers. The new intern will work mainly for experience and not necessarily to gain equity.

All of the individuals that have been given the opportunity to farm with the Bergs have started on wages. This means that the financial records of the operation typically include a significant amount of hired labor expense. Therefore, Jerold's NFIFO per Cow is not as high as many farms experience but is impressive under the circumstances. Most of the farms in the multi-state project are single family farms with little hired labor. If Jerold's NFIFO per Cow and per CWT EQ were adjusted to be compared apples to apples, his financial performance measures would be well above average, not to mention the farm is debt free.

In the 1970s, in the interest of soil conservation, Jerold bought a no-till planter. It worked well, but Jerold found the control of grasses to be difficult and costly. He began to think that there ought to be some value in plants that were as persistent as the grass he was trying to control. He wasn't fond of using pesticides. After several years, he began hearing about management intensive rotational grazing. In the dry year of 1989, he visited the farm of Charlie Opitz. On the way, Jerold saw lots of brown grass. He was impressed when he arrived at the Opitz farm to see green grass. He then attended the first Wisconsin Grazing Conference in 1990. In the spring of 1990 he began to graze and has continued to graze ever since. As a convert to grazing Jerold has not been a low-input grazer, but has incorporated grazing into his farming operation mainly by adopting new practices as they prove their value.

He started grazing the older hay fields. Now the 80 acres closest to the barn are kept in permanent pasture. By coincidence, Jerold's steepest slopes are closest to the barn on both sides of the highway. This is not a problem due to a highway underpass installed by the highway department in 1933 mainly for drainage purposes.

Brome grass, orchard grass and alfalfa are common in his pastures. Until 2001, Jerold did not do much reseeding of pastures beyond occasionally frost seeding. In 2001 he planted reeds canary grass, Kura clover, and switch grass. The switch grass was disappointing. Jerold is very pleased with the canary

⁷ This case farm report has excerpts from the April 2003 edition of *Graze* magazine.

grass and expects the Kura clover to work well. He has had more success fall seeding than spring seeding Kura clover.

Jerold still raises most of the forage and grain consumed by the dairy herd. He typically raises 30 acres of corn grain, 30 acres of corn silage and 20 acres of soybeans to supply roasted soybeans for the dairy herd. About 80 of his acres are devoted to grazing. Except for nitrogen in corn starter fertilizer and potassium and lime on his hayfields, Jerold relies mainly on manure to fertilize his farm acres.

Jerold and Janice Berg are good examples of how a traditional confinement farm can evolve into grazing by adapting new practices that prove themselves while retaining the best parts of the previous system.

One change in practice that he implemented early on was to provide water in his pastures by hauling water on a trailer. He lost so much water to splashing that soon he laid water lines in strategic locations.

Calves are gang fed milk, sour colostrum, or milk replacer with a barrel feeder. Once weaned, the calves are exposed to pasture.

Five years after pouring a narrow concrete cattle lane, Berg is very pleased with it. He used about \$400 worth of concrete to pour a 160-foot cattle raceway through a level, mud hole-prone area near his barn that sees heavy cow traffic. The lane is about three feet wide by five inches thick, and includes fiberglass in the concrete mix. It is situated within a wider lane that has seen few improvements.

"When it's dry, the cows don't use it (the concrete)," Berg says. "But 95% of them use it when conditions are bad. I'm real happy with it." Berg graded the area once before the concrete was poured, but did not add any material to the sandy loam base. He employed a simple "slip form" built from two-by-six lumber. Two pieces, each about five-feet long, were placed about 36 inches apart. Near the front was a two-by-six crosspiece wedged upward one inch toward the front edge. Near the back, another two-by-six was placed flat atop the sideboards. There are no signs of cracking, even though the lane is occasionally driven over by a tractor hauling a loaded, 3,300 gallon manure tank.

He continues to graze Holsteins but has shifted to a semi-seasonal calving system since starting to graze in 1990. Jerold has been using New Zealand Holstein genetics since 1997. Recently other grazers have begun purchasing breeding stock from his operation.

Jerold is a dedicated record keeper. For as long as he has farmed, Jerold has been a member of the Lakeshore Farm Management Association. It is one of two cooperatives in Wisconsin that provides record analysis, income tax management and filing services for its members. (The Fox Valley Farm Management Association located on the other side of Lake Winnebago, is the other one). Jerold has also used DHI testing in his entire farming career to help him make dairy herd management decisions. He was a charter participant in the Wisconsin Grazing Dairy Profitability Analysis project (a precursor to the Great Lakes Grazing Network Analysis Project). He has been sharing his data since 1995.

The Bergs' farm borders the small Village of Cascade. In 1998, 40 of his acres next to the village were designated to be subdivided for additional housing in the Village. To replace the feed production of the subdivided acres, Jerold rented another 40 acres on the opposite side of his farm.

In 1990, Janice was diagnosed with multiple sclerosis. Not only did this diminish her ability to work on the farm, eventually it meant that she would require assistance for daily living. By 1998, her condition had put her into a wheel chair. That same year, money from the subdivided land was used to make the house wheel chair friendly.

Beyond the farm gate, Jerold is President of the Eastern Wisconsin Sustainable Farmers Network, an organization that promotes sustainable agricultural practices among farms. He also has been involved in the Great Lakes Grazing Network and has represented the Wisconsin Farm Bureau in the Grazing Lands Conservation Initiative (GLCI) organization.

Jerold has volunteered at the River Edge Nature Center near Milwaukee for over 25 years. With his involvement, Jerold helps urban people understand sustainable agriculture and its role in the

environment. He has also been involved in promoting the Farm Fresh Atlas, a publication which lists Eastern Wisconsin farms from which consumers can buy products directly.

When asked to summarize the benefits of the grazing system, Jerold points to a number of small advantages he realizes in contrast to one or two dramatic items. He explains that the system has allowed him to extend the useful life of buildings and equipment he had as a traditional confinement farmer. This helps him control his fixed and operating costs. He feels the grazing system is more environmentally friendly with less reliance on fossil fuels and pesticides. Also, his urban neighbors like seeing his cows on pasture. Over all he believes the incorporation of grazing into his operation has made it more sustainable economically, environmentally, and socially.

VI. State-to-State Differences in Financial Performance

A farm is a sufficiently complex business for which no single management factor will guarantee financial success. No single financial measure or benchmark tells the whole story. **The factor that is most influential in achieving profitability is management ability; a factor, which is difficult to recognize, judge, measure, or even see.**

Differences in financial performance between states have appeared in dairy farm financial data in all four years.

In 2003, New York graziers were second only to Ontario in NFIFO/Cow but still third behind Wisconsin in NFIFO/CWT EQ. In 2000 the average financial performance (NFIFO/Cow and NFIFO/CWT EQ) was lowest in New York followed by Michigan. The two states traded positions for 2001 and 2002. Ontario and Wisconsin have dominated the top positions for four years. Ohio was near the top in the first two years but dropped to last in 2002 and second to last in 2003. Michigan was last in 2001 to 2003. When the project states (other than Michigan, Ohio, Ontario, New York, and Wisconsin) were summarized, their average financial performance was closer to the top than the bottom in all years. The gap between the lowest group and the highest group was easily noticed in all years.

It is impossible to explain every factor causing state-to-state differences but these occurrences are monitored and considered in the interpretation of the data. The difficulty in explaining these differences is increased by the fact that there is a wide range in the amount of data submitted from each state.

Most of the data in all four years have come from Michigan, New York, Ontario, and Wisconsin. Minnesota grazing dairy herds tend to have other significant enterprises that disqualify many of them for the study. Most of the other cooperating states don't have as large of a dairy industry as those states supplying more data.

The following factors likely contribute to the regional differences.

- Milk price variations occur from one state to another. Ontario has a quota system that typically results in higher milk prices than occur in the states. The Eastern states in the project tend to receive higher prices than the more Western states in the project—yet they tend to be less profitable. Ohio had the biggest decline in milk price from 2001 to 2002, which may explain in large part the drop in Ohio profitability in 2002. Wisconsin had the lowest milk price in 2000 and 2001 and second lowest to Michigan in 2002 and 2003. Michigan was second lowest in 2000 and 2001. These price rankings are based on the herds in the summaries.
- Weather can also cause state-to-state differences in profitability. The general climate is fairly similar across the province and states participating in the project. Despite that fact, weather can be variable from one end to another in a given year. Some of the states could be “drowning” in the same year that other states might experience drought. Ohio graziers experienced very adverse weather conditions in 2002. New York was very wet in 2002. In 2001, part of New York was abnormally dry while the other part was abnormally wet.
- Feed (purchased or raised) represents a major cost on livestock operations. As such, it is an important factor in influencing profitability. Still, its impact on profits must be analyzed carefully to avoid inaccurate conclusions. For example, a farm which buys all of its feed tends to have higher

purchased feed costs than a farm that raises most or all of its feed. Yet, the total feed cost per CWT EQ of milk sold could be higher for a farm that raises most of its feed. All of the costs of raising feed should be considered. The cost of raising feed should include the cost of land, equipment, and labor along with the more obvious costs such as fertilizer, fuel, pesticides, etc. It is not clear how the average grazer in one state, compares to the average grazer in another state in terms of the proportion of total feed needs that are purchased instead of raised.

- Still, purchased (forage and grain) feed costs may also partially explain the state-to-state differences. In 2003, New York had the highest feed cost followed by Ohio, Michigan, Wisconsin and Ontario. Purchased feed cost/CWT EQ ranged from a high of \$3.24 to a low of \$1.70 among the states with enough data to do a state summary. In all years, Ontario easily had the low purchased feed cost per CWT EQ. In 2002, Ohio had the highest purchased feed cost/CWT EQ followed by New York and Michigan, in that order. Purchased feed cost/CWT EQ ranged from a high of \$3.57 to a low of \$1.59 in 2002 among the states with enough data to do a state summary. In 2001 and 2000 New York had the highest purchased feed cost/CWT EQ followed by Michigan and Ohio. Purchased feed cost/CWT EQ ranged from a high of \$3.50 to a low of \$1.77 in 2001. Purchased feed cost/CWT EQ ranged from a high of \$2.82 to a low of \$1.28 in 2000. When a farm attempts to raise most of its feed but fails to do so because of drought or other reasons, it is in a situation that might be described as buying feed twice. Obviously in such a case, high purchased feed cost strongly implies reduced profits.
- Several years of New York and Wisconsin confinement dairy farm data indicate that larger herds have lower levels of NFIFO/Cow and NFIFO/CWT EQ than smaller herds. Larger herds hire a larger percent of their total labor requirements. This is why NFIFO without labor compensation is used along with NFIFO in this project. This pattern - where larger herds have lower levels of NFIFO/Cow and NFIFO/CWT EQ than smaller herds - also appears in this grazing data (see Table 3-1 in this report). In most comparisons, paid labor costs explain part, but not all of the differences.
- The average Michigan and New York grazing herds in this project are larger than the average herds from the other states. However, the smaller herds in these two states perform (in terms of NFIFO/Cow and NFIFO/CWT EQ) at levels fairly similar to the larger herds in these two states in some years. Consequently, size appears to be only a minor factor in the state-to-state differences that are observed.

Further analysis of grazing financial performance, milk prices and management practices is needed to help interpret state-to-state differences.

VII. 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 the historic cost (HC) value of assets—often called adjusted tax basis; the other track uses current market value (CMV). Each method has positives and negatives. 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 CMV 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, planning a farm business transfer or arrangement, and estimating the tax consequences of many major business decisions. Unfortunately, relying too heavily on CMV balance sheets convinced 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 uninformed decisions. The 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 CMV. 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 (**page 1**) and CMV of assets and economic depreciation (**page 2**)). Again, the analysis focuses on the financial measures using the HC approach because it 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: generated by operating the business
- Contributed capital: monetary contributions to the business not earned by 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.

VIII. Contingent Liabilities (CMV only)

Due to the fact that few farm assets are liquid (meaning 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 the CMV track assets would be used for 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.

IX. 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 long-run financial obligations of the business. All long-run financial obligations 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; 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 labor, management and equity, and because the inclusion of opportunity cost requires some assumptions, the allocated cost group becomes useful also.

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, interest, non-livestock depreciation, paid labor, and paid 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 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
- 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.

Non-basic costs are the four costs added to basic cost to become allocated costs. The four non-basic costs are interest, non-livestock depreciation, paid labor and paid management.

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 2 also has a worksheet that can be used to calculate all three cost categories.

X. Cost per Hundredweight Equivalent (CWT EQ) vs. CWT Sold

CWT EQ 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.

Dairy farms have numerous sources of income: milk, cull cows, calves, Commodity Credit Corporation (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 comparable 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:

Total Farm Income from all Sources
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:

$$\frac{\text{Total Farm Income from all Sources}}{\text{U.S. All Milk Price per Hundredweight (for the year in question)}} \\ \text{The U.S. All Milk Price per Hundredweight for 2003 is \$12.50.}$$

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 (farms with less than 25% dairy enterprise income are omitted in this report).

The U.S. All Milk Price is calculated by the USDA by summing all the gross income from milk sales from all of the farms in the country and dividing that sum by the sum of the total hundredweights of milk sold by all the farms in the country. This price is used for the Hundredweight of Milk Sales Equivalent (CWT EQ) calculation.

In contrast, the number at the top of the CWT **sold** column on the cost of production reports is the **INCOME per 100 pounds of milk sold** by the business. **It is not the milk price.** The income per 100 pounds of milk sold is calculated by dividing total farm income by the hundredweight of milk sold. This is necessary because each expense item is divided by the hundredweight of milk sold. Therefore these expense amounts must be compared to the INCOME per hundredweight of milk sold and not to the price of milk.

XI. Comparing the Average Cost of Production of Multi-State Graziers with Your Cost of Production

Table 1-1 summarizes selected numbers (mainly from Tables 1-2 to 1-5) for 102 graziers in 2003 and repeats comparable numbers from 103 graziers in 2002, 126 graziers in 2001, and 92 graziers in 2000.

The farm earnings statement (Table 1-2) presents values on a whole farm, per Cow and per CWT EQ basis. Table 1-3 shows the average cost of production values from all the graziers in 2003, presenting values on a whole farm, per CWT sold, and per CWT EQ basis. Use the per CWT EQ columns to compare costs for each cost category. 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. Unless you use the CWT EQ method of calculating cost of production, you cannot make apples to apples comparisons of cost of production.

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.

XII. The Average Performance of 102 Grazing Farms in 2003, 103 in 2002, 126 in 2001 and 92 in 2000

The HC asset valuation method is used to calculate measures of profitability in the detailed cost of production and farm earnings reports in the tables, 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. The grazing dairy farm families that provided usable data display an average financial performance level that many farm families would be satisfied with. This level of financial performance along with some other characteristics of grazing systems suggests grazing may be a viable alternative for farm families who want to be financially successful, especially on a dairy farm that relies primarily on family labor.

The number of summarized herds increased from 92 in 2000 to 126 in 2001, and decreased to 103 and 102 respectively in 2002 and 2003. Some herds have been new to the study each year. Some year to year differences come from this change in participating farms. Primarily because the sharing of farm financial data is a voluntary act, data is not collected via a random selection procedure. In general, the larger the group, the more likely that the group is a representative sample. Also in general, most groups of less than 20 may not be representative of the larger population they come from.

The financial performance of graziers was respectable in 2003, 2002, and 2000 and was considerably higher in 2001. Some of the year-to-year differences are explained by an average multi-state grazer mailbox milk price change from \$14.39 in 2003 to \$13.73 in 2002 to \$16.31 in 2001 to \$13.16 in 2000. *The **average mailbox milk price** in this report is calculated by summing all the gross income from milk sales from all of the farms in the group and dividing that sum by the sum of the total hundredweights of milk sold by all the farms in the group. The **U.S. All Milk Price** is calculated by the USDA by summing all the gross income from milk sales from all of the farms in the country and dividing that sum by the sum of the total hundredweights of milk sold by all the farms in the country. This price is used for the Hundredweight of Milk Sales Equivalent (CWT EQ) calculation (see Chapter X).*

The U.S. All Milk Price was \$12.50 in 2003, \$12.15 in 2002, \$14.94 in 2001, and \$12.33 in 2000. The financial performance in 2003 was more like 2000 and 2002, all being less desirable than 2001. Basic, allocated and non-basic costs were highest in 2001 and lowest in 2003. It is fairly common for the cost per unit to increase in years of higher prices. This is at least partly explained by patterns of behavior. Farm managers often decrease discretionary purchases in lower milk price years and increase discretionary purchases in higher milk price years. This is influenced by the desire to balance cash flows and tax liabilities from one year to another.

NFIFO per Cow, NFIFO per CWT EQ and total NFIFO was considerably higher in 2001 than in the other years.

The pounds of milk sold per Cow appeared to be on a downward trend the first three years. The decline was substantial from 2000 to 2001 and much smaller from 2001 to 2002. It increased slightly from 2002 to 2003. Many factors influence the change in the average pounds of milk sold per Cow including weather and the fact that about only 70% of the herds in the data are the same from one year to another. Therefore it's difficult to make meaningful conclusions about this appearance of a trend.

If all labor and management compensation were omitted, NFIFO/CWT EQ would increase substantially in all years. Paid labor and management compensation averaged \$0.96/CWT EQ in 2003, \$1.10/CWT EQ in 2002, \$1.13/CWT EQ in 2001, and \$0.94/CWT EQ in 2000.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 1-1 Performance Measures Selected from Tables 1-2 to 1-5 Summarizing the Average Performance of Grazing Dairy Farms From Many States				
	2000	2001	2002	2003
Number of Herds	92	126	103	102
Number of Cows per Herd	90	84	86	87
Average Lbs. Milk per Cow	16,836	15,426	15,332	15,381
Average Lbs. Milk per Herd	1,511,264	1,303,333	1,318,507	1,344,643
Group Average Mailbox Milk Price	\$13.16	\$16.31	\$13.73	\$14.39
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.33	\$14.94	\$12.15	\$12.50
Average Basic Cost per CWT EQ	\$7.83	\$8.60	\$7.74	\$7.79
Allocated Cost per CWT EQ	\$10.67	\$11.68	\$10.45	\$10.39
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.84	\$3.08	\$2.71	\$2.60
NFIFO per Cow (without deducting any labor compensation)	\$577	\$866	\$620	\$662
NFIFO per CWT EQ (without deducting any labor compensation)	\$2.60	\$4.39	\$2.80	\$3.07
NFIFO per Farm	\$33,098	\$54,283	\$32,354	\$40,335
NFIFO per Cow	\$395	\$643	\$376	\$461
NFIFO per CWT EQ	\$1.66	\$3.26	\$1.70	\$2.11

*See Chapters IX and X for more information about CWT EQ and cost categories.

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 102 graziers in 2003.



Table 1-2 p. 1
The Average AgFA© Farm Earnings for 102 Great Lakes Graziers

Income	<u>2003</u>	<u>2003</u>	<u>2003</u>
	<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	2.51	0.03	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	190,507.33	2,179.18	9.99
Raised Non-Breeding Livestock Sales	6,351.07	72.65	0.33
Crop Sales	1,803.83	20.63	0.09
Distributions Received from Cooperatives	612.78	7.01	0.03
Agricultural Program Payments	14,527.28	166.18	0.76
MILC Program Payments	3,823.48	43.74	0.20
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	882.42	10.09	0.05
Other Income, Incl. Tax Credits, Refunds	2,930.94	33.53	0.15
Sale of Purchased Breeding Livestock	201.84	2.31	0.01
Basis in Breeding Livestock Sold	(704.86)	(8.06)	(0.04)
Sale of Raised Breeding Livestock	11,186.93	127.97	0.59
Total Cash Income - Basis Adjustments	232,125.55	2,655.24	12.17
Non-Cash Income			
Change in Raised Crop Inventories	3,277.58	37.49	0.17
Change in Remaining Current Assets	104.17	1.19	0.01
Change in Raised Breeding Livestock	2,981.04	34.10	0.16
Total Non-Cash Income	6,362.80	72.78	0.33
Total Income	238,488.35	2,728.03	12.50



Table 1-2 p. 2

The Average AgFA© Farm Earnings Report for 102 Great Lakes Graziers

Expenses	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Expense			
Cost of Items for Resale	146.98	1.68	0.01
Breeding Fees	2,580.89	29.52	0.14
Car and Truck Expenses	637.44	7.29	0.03
Chemicals	1,034.94	11.84	0.05
Conservation Expenses	83.58	0.96	0.00
Custom Heifer Raising Expenses	29.41	0.34	0.00
Custom Hire (Machine Work)	6,003.79	68.68	0.31
Employee Benefits - Dependents	99.40	1.14	0.01
Employee Benefits - Non-Dependents	487.95	5.58	0.03
Feed Purchase	54,749.09	626.27	2.87
Fertilizer and Lime	5,794.64	66.28	0.30
Freight and Trucking	2,056.43	23.52	0.11
Gasoline, Fuel, and Oil	5,583.19	63.87	0.29
Farm Insurance	3,853.20	44.08	0.20
Mortgage Interest	7,850.59	89.80	0.41
Other Interest	2,267.08	25.93	0.12
Labor Hired - Dependents	603.14	6.90	0.03
Labor Hired - Non-Dependents	16,926.33	193.62	0.89
Pension and Profit-Sharing Plans - Non-	0.00	0.00	0.00
Pension and Profit-Sharing Plans -	58.82	0.67	0.00
Rent/Lease Equipment	1,205.48	13.79	0.06
Rent/Lease Other	5,078.36	58.09	0.27
Repairs and Maintenance	12,802.03	146.44	0.67
Building and Fence Repairs	1,326.34	15.17	0.07
Machinery Repairs	814.21	9.31	0.04
Seeds and Plants Purchased	3,236.60	37.02	0.17
Storage and Warehousing	5.24	0.06	0.00
Supplies Purchased	5,822.09	66.60	0.31
Taxes - Other	4,022.17	46.01	0.21
Taxes - Payroll	40.51	0.46	0.00
Utilities	5,696.79	65.16	0.30
Veterinary Fees and Medicine	5,288.60	60.50	0.28
Other Farm Expenses	5,201.69	59.50	0.27
Marketing & Hedging	7,156.59	81.86	0.38
Other Crop Expenses	644.16	7.37	0.03
Other Livestock Expenses	6,981.14	79.86	0.37
Selling Expense of Capital Items	8.18	0.09	0.00
Total Cash Expense	176,177.06	2,015.26	9.23
Non-Cash Expenses			
- Change in Prepaid Expenses	(1,593.39)	(18.23)	(0.08)
Change in Accounts Payable	806.75	9.23	0.04
Machinery, Equipment and Building	21,244.52	243.01	1.11
Livestock Depreciation	1,518.46	17.37	0.08
Total Non-Cash Expenses	21,976.33	251.38	1.15
Total Expenses	198,153.39	2,266.64	10.39
Net Farm Income From Operations (NFIFO)	40,334.95	461.38	2.11
Gain (Loss) on Sale of All Farm Capital Assets	801.42	9.17	0.04
Net Farm Income (NFI)	41,136.37	470.55	2.16



Table 1-3 p. 1

The Average Cost of Production Report for 102 Great Lakes Graziers. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Income		2003	2003	2003
		per Farm	per Cow	per CWT EQ
Total Income		238,488.35	17.74	12.50
Expenses				
Basic Cost				
Cost of Items for Resale	146.98	0.01	0.01	
Breeding Fees	2,580.89	0.19	0.14	
Car and Truck Expenses	637.44	0.05	0.03	
Chemicals	1,034.94	0.08	0.05	
Conservation Expenses	83.58	0.01	0.00	
Custom Heifer Raising Expenses	29.41	0.00	0.00	
Custom Hire (Machine Work)	6,003.79	0.45	0.31	
Feed Purchase	54,749.09	4.07	2.87	
Fertilizer and Lime	5,794.64	0.43	0.30	
Freight and Trucking	2,056.43	0.15	0.11	
Gasoline, Fuel, and Oil	5,583.19	0.42	0.29	
Farm Insurance	3,853.20	0.29	0.20	
Rent/Lease Equipment	1,205.48	0.09	0.06	
Rent/Lease Other	5,078.36	0.38	0.27	
Repairs and Maintenance	12,802.03	0.95	0.67	
Building and Fence Repairs	1,326.34	0.10	0.07	
Machinery Repairs	814.21	0.06	0.04	
Seeds and Plants Purchased	3,236.60	0.24	0.17	
Storage and Warehousing	5.24	0.00	0.00	
Supplies Purchased	5,822.09	0.43	0.31	
Taxes - Other	4,022.17	0.30	0.21	
Taxes - Payroll	40.51	0.00	0.00	
Utilities	5,696.79	0.42	0.30	
Veterinary Fees and Medicine	5,288.60	0.39	0.28	
Other Farm Expenses	5,201.69	0.39	0.27	
Marketing & Hedging	7,156.59	0.53	0.38	
Other Crop Expenses	644.16	0.05	0.03	
Other Livestock Expenses	6,981.14	0.52	0.37	
- Change in Prepaid Expenses	(1,593.39)	(0.12)	(0.08)	
Change in Accounts Payable	806.75	0.06	0.04	
Selling Expense of Capital Items	8.18	0.00	0.00	
Depreciation on Purchased Breeding	1,518.46	0.11	0.08	
Total Basic Cost	148,615.57	11.05	7.79	



Table 1-3 p. 2

The Average Cost of Production Report for 102 Great Lakes Graziers. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

	2003 per Farm	2003 per Cow	2003 per CWT EQ
Interest Cost			
Mortgage Interest	7,850.59	0.58	0.41
Other Interest	2,267.08	0.17	0.12
Total Interest Cost	10,117.66	0.75	0.53
Labor Cost			
Employee Benefits - Dependents	99.40	0.01	0.01
Employee Benefits - Non-Dependents	487.95	0.04	0.03
Labor Hired - Dependents	603.14	0.04	0.03
Labor Hired - Non-Dependents	16,926.33	1.26	0.89
Pension and Profit-Sharing Plans - Non-Dependents	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	58.82	0.00	0.00
Value of Unpaid Labor & Management	36,432.84	2.71	1.91
Total Labor Cost	54,608.49	4.06	2.86
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	21,244.52	1.58	1.11
Interest on Equity Capital	26,402.25	1.96	1.38
Total Depreciation & Equity Cost	47,646.77	3.54	2.50
Total Expenses	260,988.49	19.41	13.68
Total Income - Total Expenses	(22,500.14)	(1.67)	(1.18)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	198,153.39	14.7365104	10.39
Net Farm Income From Operations (NFIFO)	40,334.95	3.00	2.11
Gain (Loss) on Sale of All Farm Capital Assets	801.42	0.06	0.04
Net Farm Income (NFI)	41,136.37	3.06	2.16



Table 1-4 p. 1

The Average AgFA© Financial Measures Report Showing Selected Measures of Financial Performance for 102 Great Lakes Graziers

These Financial Measures Were Calculated Using the Cost Basis of Assets and Cost (Tax) Depreciation

The financial calculations using the Market Basis of Assets and Economic Depreciation are on the following page.

	2003 <u>per farm</u>	2003 <u>per Cow</u>	2003 <u>per CWT EQ</u>
Profitability			
Net Farm Income From Operations	\$40,334.95	\$461.38	\$2.11
Net Farm Income	\$41,136.37	\$470.55	\$2.16
Rate of Return on Assets (ROROA)	7.86%	7.86%	7.86%
Cost (Tax) Depreciation Claimed	\$22,762.97	\$260.38	\$1.19
Rate of Return on Equity	11.30%	11.30%	11.30%
Net Profit Margin	6.23 %	6.23 %	6.23 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.234	1.234	1.234
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio	0.623	0.623
	Wages Paid Ratio	0.076	0.076
	Interest Paid Ratio	0.042	0.042
	Depreciation Ratio	0.089	0.089
Net Farm Income from Operations Ratio	0.169	0.169	0.169
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$45,322.87	\$518.44	\$2.38
Coverage Margin	\$9,762.56	\$111.67	\$0.51
Term Debt Coverage Ratio	1.84	1.84	1.84
Liquidity			
Net Cash Income	\$56,653.35	\$648.05	\$2.97
Working Capital	\$21,466.45	\$245.55	\$1.13
Current Ratio	1.57	1.57	1.57
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$335,813.65	\$3,841.31	\$17.60
Beginning Total Farm Liabilities	\$187,514.38	\$2,144.94	\$9.83
Beginning Farm Net Worth	\$148,299.27	\$1,696.37	\$7.77
Farm Debt to Asset Ratio - Beginning of Year	0.602	0.602	0.602
Ending Total Farm Assets	\$353,899.53	\$4,048.19	\$18.55
Ending Total Farm Liabilities	\$202,232.58	\$2,313.30	\$10.60
Ending Farm Net Worth	\$151,666.94	\$1,734.89	\$7.95
Year Ending Farm Debt to Asset Ratio	0.571	0.571	0.571



Table 1-4 p. 2

The Average AgFA© Financial Measures Report Showing Selected Measures of Financial Performance for 102 Great Lakes Graziers

These Financial Measures Were Calculated Using the Market Value of Assets and Economic Depreciation

The financial calculations using the Cost Basis of Assets and Cost (Tax) Depreciation are on the previous page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$55,871.18	\$639.10	\$2.93
Net Farm Income	\$56,672.60	\$648.27	\$2.97
Rate of Return on Assets (ROROA)	4.20 %	4.20 %	4.20 %
Economic Depreciation Claimed	\$7,254.20	\$82.98	\$0.38
Rate of Return on Equity	3.83 %	3.83 %	3.83%
Net Profit Margin	12.73 %	12.73 %	12.73%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.330	0.330	0.330
Note: Some methods of calculating Basic Cost Ratio	0.621	0.621	0.621
ratios combine the Basic Cost and Wages	0.076	0.076	0.076
Paid Ratios into a single	0.042	0.042	0.042
ratio (Operating Cost Ratio).			
Interest Paid Ratio			
Net Farm Income from Operations Ratio	0.234	0.234	0.234
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$45,322.87	\$504.92	\$2.31
Coverage Margin	\$9,762.56	\$111.67	\$0.51
Term Debt Coverage Ratio	1.84	1.81	
Liquidity			
Net Cash Income	\$56,653.35	\$648.05	\$2.97
Working Capital	\$21,466.45	\$245.55	\$1.13
Current Ratio	1.57	1.57	1.57
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$697,327.49	\$7,976.61	\$36.55
Beginning Total Farm Liabilities	\$187,514.38	\$2,144.94	\$9.83
Beginning Farm Net Worth	\$509,813.11	\$5,831.66	\$26.72
Farm Debt to Asset Ratio - Beginning of Year	0.269	0.269	0.269
Ending Total Farm Assets	\$748,458.64	\$8,561.49	\$39.23
Ending Total Farm Liabilities	\$202,232.58	\$2,313.30	\$10.60
Ending Farm Net Worth	\$546,226.06	\$6,248.18	\$28.63
Year Ending Farm Debt to Asset Ratio	0.270	0.270	0.270
Total Change in Farm Net Worth	\$36,412.95	\$416.52	\$1.91



Table 1-5

The Average AgFA© Balance Sheet of 102 Great Lakes Graziers in 2003 Showing the Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>
Current Assets			
Cash Accounts	7,027	9,730	
Prepaid Expenses & Purchased Inventories	6,254	7,847	
Raised Feed Inventories	27,267	30,544	
Basis in Resale Livestock Purchased	0	16	
Accounts Receivable	7,756	8,241	
Market Livestock & Etc.	2,835	2,454	
Total Current Assets	51,138	58,832	
Non-Current Assets			
Raised Breeding Livestock	150,109	153,090	<u>Beg. Dollars</u> <u>End Dollars</u>
Purchased Breeding Livestock	663	689	2,800 2,496
Machinery & Equipment	107,463	113,526	24,790 26,623
Buildings	45,213	47,886	22,816 25,274
Land & House	253,151	274,251	61,920 65,994
Other Non-Current Assets	89,590	100,185	22,241 21,590
Total Non-Current Assets	646,189	689,626	134,567 141,977
Total Farm Assets	697,327	748,459	
Current Liabilities			
Accounts Payable	6,222	7,001	
Current Portion of Non-Current Liabilities	19,935	18,364	
Other Current Liabilities	8,714	12,001	
Total Current Liabilities	34,872	37,366	
Non-Current Liabilities			
Intermediate Liabilities	22,311	23,127	
Long-Term Liabilities	130,332	141,740	
Contingent Liabilities	145,550	156,418	
Total Non-Current Liabilities	298,193	321,284	
Total Farm Liabilities	333,064	358,650	
Non-Farm Assets	37,072	40,988	
Non-Farm Liabilities	1,877	2,178	

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	751	1,917	1,167
Retained Earnings 1	147,549	149,750	2,201
	215,964	238,142	22,178
Total Farm Equities	364,263	389,809	25,545
Non-Farm Equities	35,195	38,810	3,615
Total Equities	399,458	428,618	29,160

1 All current assets and raised breeding livestock are included in retained

XIII. Comparing the Top Half to the Bottom Half of Graziers Sorted by NFIFO/CWT EQ Sold⁸

The average “top half” herd in 2003 was smaller, produced slightly more milk per Cow, had a lower basic, allocated and total cost per CWT EQ, and had more than three times as much NFIFO per CWT EQ and more than four times as much 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, repairs, property taxes, and prepaid expense. They tied in spending per CWT EQ for freight and trucking. *The cost categories in which the top group had their biggest advantage was (in order of most to least \$/CWT EQ) labor and management (\$0.32), feed purchased (\$0.28), rent and leasing (\$0.26), interest (\$0.23), other livestock expenses (\$0.20), and other farm expenses (\$0.14).*

Overall, the top herds had a \$1.86 advantage in basic cost per CWT EQ and another \$0.62 per CWT EQ advantage in the four non-basic cost categories that are added to the basic cost category to create the allocated cost category. More specifically, the top group spent \$0.23 per CWT EQ less for interest, \$0.32 per CWT EQ less for labor and management, and \$0.07 less per CWT EQ for depreciation. This accounts for the \$2.48 (\$3.39-\$0.91) advantage that the top herds had in NFIFO per CWT EQ.

Because of rounding, some small mathematical differences might be found in the summary tables below.

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 2-2 to 2-9			
	Top Half	Bottom Half	2003 Average
Number of Herds	50	50	102
Number of Cows per Herd	77	98	87
Average Lbs. Milk per Cow	15,938	14,845	15,381
Average Lbs. Milk per Herd	1,221,182	1,460,414	1,344,643
Group Average Mailbox Milk Price	\$15.09	\$13.87	\$14.39
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.50	\$12.50	\$12.50
Average Basic Cost per CWT EQ	\$6.84	\$8.70	\$7.79
Allocated Cost per CWT EQ	\$9.11	\$11.59	\$10.39
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.27	\$2.89	\$2.60
NFIFO per Cow (without deducting any labor compensation)	\$1,023	\$410	\$662
NFIFO per CWT EQ (without deducting any labor compensation)	\$4.18	\$2.02	\$3.07
NFIFO per Farm	\$63,470	\$18,249	\$40,335
NFIFO per Cow	\$828	\$186	\$461
NFIFO per CWT EQ	\$3.39	\$0.91	\$2.11

*See Chapters IX and X for more information about CWT EQ and cost categories.

If paid labor and management compensation were omitted, the NFIFO per CWT EQ would increase to \$4.18 for the top half and to \$2.02 for the bottom half.

The year 2003 comparison of the top versus bottom half was more similar to the 2002 and 2000 comparison than to the 2001 comparison. The top half had over four times as much NFIFO per CWT EQ and NFIFO per Cow in 2002 and 2000 and about two and one-half times NFIFO per CWT EQ and per Cow in 2001. **The more difficult years (such as those with lower milk prices) often show more differences in financial performance between the top and bottom groups when compared to high profit years.**

See tables 2-2 to 2-9 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 Chapter X for more information about CWT EQ.



Table 2-2 p. 1

**The Average AgFA© Farm Earnings Report for the Top Half of Great Lakes Graziers.
The 50 Top Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT
EQ**

Income	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	5.12	0.07	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	185,015.29	2,414.71	9.87
Raised Non-Breeding Livestock Sales	6,016.78	78.53	0.32
Crop Sales	1,298.82	16.95	0.07
Distributions Received from Cooperatives	682.21	8.90	0.04
Agricultural Program Payments	12,418.26	162.08	0.66
MILC Program Payments	3,601.30	47.00	0.19
Crop Insurance Proceeds and Certain Disaster	0.00	0.00	0.00
Custom Hire (Machine Work) Income	802.12	10.47	0.04
Other Income, Incl. Tax Credits, Refunds	2,350.78	30.68	0.13
Sale of Purchased Breeding Livestock	411.76	5.37	0.02
Basis in Breeding Livestock Sold	(449.74)	(5.87)	(0.02)
Sale of Raised Breeding Livestock	8,569.22	111.84	0.46
Total Cash Income - Basis Adjustments	220,721.91	2,880.73	11.77
Non-Cash Income			
Change in Raised Crop Inventories	6,705.04	87.51	0.36
Change in Remaining Current Assets	653.24	8.53	0.03
Change in Raised Breeding Livestock	6,235.42	81.38	0.33
Total Non-Cash Income	13,593.69	177.42	0.73



Table 2-2 p. 2

The Average AgFA© Farm Earnings Report for the Top Half of Great Lakes Graziers.
The 50 Top Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT EQ

Expenses	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Expense			
Cost of Items for Resale	89.58	1.17	0.00
Breeding Fees	2,687.71	35.08	0.14
Car and Truck Expenses	582.78	7.61	0.03
Chemicals	969.10	12.65	0.05
Conservation Expenses	0.00	0.00	0.00
Custom Heifer Raising Expenses	60.00	0.78	0.00
Custom Hire (Machine Work)	3,665.33	47.84	0.20
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	246.98	3.22	0.01
Feed Purchase	51,141.69	667.47	2.73
Fertilizer and Lime	4,366.37	56.99	0.23
Freight and Trucking	2,030.02	26.49	0.11
Gasoline, Fuel, and Oil	5,337.04	69.66	0.28
Farm Insurance	3,404.48	44.43	0.18
Mortgage Interest	6,154.92	80.33	0.33
Other Interest	1,544.16	20.15	0.08
Labor Hired - Dependents	647.72	8.45	0.03
Labor Hired - Non-Dependents	13,933.58	181.85	0.74
Pension and Profit-Sharing Plans - Dependents	120.00	1.57	0.01
Rent/Lease Equipment	813.14	10.61	0.04
Rent/Lease Other	4,275.44	55.80	0.23
Repairs and Maintenance	13,390.23	174.76	0.71
Building and Fence Repairs	876.12	11.43	0.05
Machinery Repairs	790.22	10.31	0.04
Seeds and Plants Purchased	2,654.28	34.64	0.14
Storage and Warehousing	2.44	0.03	0.00
Supplies Purchased	4,901.22	63.97	0.26
Taxes - Other	4,223.51	55.12	0.23
Taxes - Payroll	68.82	0.90	0.00
Utilities	5,399.13	70.47	0.29
Veterinary Fees and Medicine	4,598.25	60.01	0.25
Other Farm Expenses	3,814.76	49.79	0.20
Marketing & Hedging	6,401.33	83.55	0.34
Other Crop Expenses	290.16	3.79	0.02
Other Livestock Expenses	4,919.02	64.20	0.26
Selling Expense of Capital Items	16.70	0.22	0.00
Total Cash Expense	154,416.21	2,015.35	8.24
Non-Cash Expenses			
- Change in Prepaid Expenses	(3,985.01)	(52.01)	(0.21)
Change in Accounts Payable	115.29	1.50	0.01
Machinery, Equipment and Building Depreciation	19,891.93	259.62	1.06
Livestock Depreciation	406.71	5.31	0.02
Total Non-Cash Expenses	16,428.93	214.42	0.88
Total Expenses	170,845.14	2,229.77	9.11
Net Farm Income From Operations (NFIFO)	63,470.46	828.38	3.39
Gain (Loss) on Sale of All Farm Capital Assets	853.92	11.14	0.05
Net Farm Income (NFI)	64,324.37	839.52	3.43



Table 2-3 p. 1

The Average AgFA® Cost of Production Report for the Top Half of Great Lakes Graziers.
The 50 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		2003	2003	2003
		<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
	Total Income	234,315.60	19.19	12.50
Expenses				
Basic Cost				
	Cost of Items for Resale	89.58	0.01	0.00
	Breeding Fees	2,687.71	0.22	0.14
	Car and Truck Expenses	582.78	0.05	0.03
	Chemicals	969.10	0.08	0.05
	Conservation Expenses	0.00	0.00	0.00
	Custom Heifer Raising Expenses	60.00	0.00	0.00
	Custom Hire (Machine Work)	3,665.33	0.30	0.20
	Feed Purchase	51,141.69	4.19	2.73
	Fertilizer and Lime	4,366.37	0.36	0.23
	Freight and Trucking	2,030.02	0.17	0.11
	Gasoline, Fuel, and Oil	5,337.04	0.44	0.28
	Farm Insurance	3,404.48	0.28	0.18
	Rent/Lease Equipment	813.14	0.07	0.04
	Rent/Lease Other	4,275.44	0.35	0.23
	Repairs and Maintenance	13,390.23	1.10	0.71
	Building and Fence Repairs	876.12	0.07	0.05
	Machinery Repairs	790.22	0.06	0.04
	Seeds and Plants Purchased	2,654.28	0.22	0.14
	Storage and Warehousing	2.44	0.00	0.00
	Supplies Purchased	4,901.22	0.40	0.26
	Taxes - Other	4,223.51	0.35	0.23
	Taxes - Payroll	68.82	0.01	0.00
	Utilities	5,399.13	0.44	0.29
	Veterinary Fees and Medicine	4,598.25	0.38	0.25
	Other Farm Expenses	3,814.76	0.31	0.20
	Marketing & Hedging	6,401.33	0.52	0.34
	Other Crop Expenses	290.16	0.02	0.02
	Other Livestock Expenses	4,919.02	0.40	0.26
	- Change in Prepaid Expenses	(3,985.01)	(0.33)	(0.21)
	Change in Accounts Payable	115.29	0.01	0.01
	Selling Expense of Capital Items	16.70	0.00	0.00
	Depreciation on Purchased Breeding Livestock	406.71	0.03	0.02
	Total Basic Cost	128,305.86	10.51	6.84



Table 2-3 p. 2

The Average AgFA® Cost of Production Report for the Top Half of Great Lakes Graziers.
The 50 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.

Interest Cost

	<u>2003</u> per Farm	<u>2003</u> per Cow	<u>2003</u> per CWT EQ
Mortgage Interest	6,154.92	0.50	0.33
Other Interest	1,544.16	0.13	0.08
Total Interest Cost	7,699.08	0.63	0.41

Labor Cost

Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	246.98	0.02	0.01
Labor Hired - Dependents	647.72	0.05	0.03
Labor Hired - Non-Dependents	13,933.58	1.14	0.74
Pension and Profit-Sharing Plans - Dependents	120.00	0.01	0.01
Value of Unpaid Labor & Management	36,635.84	3.00	1.95
Total Labor Cost	51,584.12	4.22	2.75

Depreciation & Equity Cost

Machinery, Equipment, Building Depreciation	19,891.93	1.63	1.06
Interest on Equity Capital	27,540.68	2.26	1.47
Total Depreciation & Equity Cost	47,432.61	3.88	2.53
Total Expenses	235,021.66	19.25	12.54
Total Income - Total Expenses	(706.06)	(0.06)	(0.04)

Net Farm Income from Operations (NFIFO) Summary

Total Allocated Costs	170,845.14	13.99014283	9.11
Net Farm Income From Operations (NFIFO)	63,470.46	5.20	3.39
Gain (Loss) on Sale of All Farm Capital Assets	853.92	0.07	0.05
Net Farm Income (NFI)	64,324.37	5.27	3.43



Table 2-4 p. 1

The Average AgFA© Financial Measures Report for the Top Half of Great Lakes Graziers.
The 50 Top Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT EQ.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$63,470.46	\$828.38	\$3.39
Net Farm Income	\$64,324.37	\$839.52	\$3.43
Rate of Return on Assets (ROROA)	19.78%	19.78%	19.78%
Cost (Tax) Depreciation Claimed	\$20,298.65	\$264.93	\$1.08
Rate of Return on Equity	82.61 %	82.61 %	82.62 %
Net Profit Margin	15.10 %	15.10 %	15.10 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.300	1.300	1.300
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.547	0.547	0.547
	Wages Paid Ratio 0.064	0.064	0.064
	Interest Paid Ratio 0.033	0.033	0.033
	Depreciation Ratio 0.085	0.085	0.085
Net Farm Income from Operations Ratio	0.271	0.271	0.271
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$60,204.20	\$785.75	\$3.21
Coverage Margin	\$33,951.41	\$443.11	\$1.81
Term Debt Coverage Ratio	2.65	2.65	2.65
Liquidity			
Net Cash Income	\$66,755.44	\$871.25	\$3.56
Working Capital	\$30,593.41	\$399.29	\$1.63
Current Ratio	2.04	2.04	2.04
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$304,341.23	\$3,972.09	\$16.24
Beginning Total Farm Liabilities	\$140,228.78	\$1,830.19	\$7.48
Beginning Farm Net Worth	\$164,112.45	\$2,141.90	\$8.75
Farm Debt to Asset Ratio - Beginning of Year	0.503	0.503	0.503
Ending Total Farm Assets	\$330,456.50	\$4,312.93	\$17.63
Ending Total Farm Liabilities	\$153,133.60	\$1,998.61	\$8.17
Ending Farm Net Worth	\$177,322.90	\$2,314.32	\$9.46
Year Ending Farm Debt to Asset Ratio	0.463	0.463	0.463
Cost Basis Change in Farm Net Worth	\$13,210.45	\$172.42	\$0.70



Table 2-4 p. 2

**The Average AgFA® Financial Measures Report for the Top Half of Great Lakes Graziers.
The 50 Top Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT EQ.**

These Financial Measures Were Calculated Using the Market Value of Assets and Economic Depreciation

The financial calculations using the Cost Basis of Assets and Cost (Tax) Depreciation are on the previous page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$77,614.46	\$1,012.98	\$4.14
Net Farm Income	\$78,468.37	\$1,024.12	\$4.19
Rate of Return on Assets (ROROA)	7.10 %	7.10 %	7.10 %
Economic Depreciation Claimed	\$6,154.65	\$80.33	\$0.33
Rate of Return on Equity	7.59 %	7.59 %	7.59 %
Net Profit Margin	21.14 %	21.14 %	21.14 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.336	0.336	0.336
Basic Cost Ratio	0.546	0.546	0.546
Wages Paid Ratio	0.064	0.064	0.064
Interest Paid Ratio	0.033	0.033	0.033
Depreciation Ratio	0.026	0.026	0.026
Net Farm Income from Operations Ratio	0.331	0.331	0.331
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$60,204.20	\$783.86	\$3.20
Coverage Margin	\$33,951.41	\$443.11	\$1.81
Term Debt Coverage Ratio	2.65	2.65	2.65
Liquidity			
Net Cash Income	\$66,755.44	\$871.25	\$3.56
Working Capital	\$30,593.41	\$399.29	\$1.63
Current Ratio	2.04	2.04	2.04
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$669,244.56	\$8,734.59	\$35.70
Beginning Total Farm Liabilities	\$140,228.78	\$1,830.19	\$7.48
Beginning Farm Net Worth	\$529,015.78	\$6,904.41	\$28.22
Farm Debt to Asset Ratio - Beginning of Year	0.210	0.210	0.210
Ending Total Farm Assets	\$725,744.90	\$9,472.00	\$38.72
Ending Total Farm Liabilities	\$153,133.60	\$1,998.61	\$8.17
Ending Farm Net Worth	\$572,611.31	\$7,473.39	\$30.55
Year Ending Farm Debt to Asset Ratio	0.211	0.211	0.211
Total Change in Farm Net Worth	\$43,595.53	\$568.98	\$2.33



Table 2-5

The Average AgFA© Balance Sheet Report for the Top Half of Great Lakes Graziers in 2003
 Showing the Current Market Values and Historic Cost Values of Assets.
 The 50 Top Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT EQ.

	<u>Beg. Dollars</u>	<u>End Dollars</u>		
Current Assets				
Cash Accounts	7,813	9,793		
Prepaid Expenses & Purchased	7,208	11,358		
Raised Feed Inventories	23,204	30,204		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	7,352	8,452		
Market Livestock & Etc.	1,832	1,421		
Total Current Assets	47,409	61,228		
Non-Current Assets			<u>Beg.</u>	<u>End</u>
Raised Breeding Livestock	136,702	143,191	<u>Dollars</u>	<u>Dollars</u>
Purchased Breeding Livestock	192	244	794	586
Machinery & Equipment	100,684	106,763	19,846	21,905
Buildings	44,305	44,263	20,073	19,299
Land & House	238,091	258,026	59,639	66,317
Other Non-Current Assets	100,937	112,952	25,740	25,201
Total Non-Current Assets	620,911	665,439	126,093	133,307
Total Farm Assets	668,320	726,667		
Current Liabilities				
Accounts Payable	1,871	1,991		
Current Portion of Non-Current	18,439	17,254		
Other Current Liabilities	5,887	11,063		
Total Current Liabilities	26,196	30,308		
Non-Current Liabilities				
Intermediate Liabilities	19,028	21,338		
Long-Term Liabilities	99,795	107,137		
Contingent Liabilities	139,756	153,220		
Total Non-Current Liabilities	258,579	281,695		
Total Farm Liabilities	284,775	312,003		
Non-Farm Assets	30,530	36,684		
Non-Farm Liabilities	2,866	3,710		

Statement of Equities (Net Worth)

	<u>Beginnin</u>	<u>Ending</u>	<u>Chang</u>
Contributed Capital	0	542	542
Retained Earnings 1	165,184	178,402	13,217
Valuation Adjustment	218,360	235,721	17,361
Total Farm Equities	383,545	414,664	31,119
Non-Farm Equities	27,664	32,974	5,310
Total Equities	411,209	447,638	36,429

1 All current
 assets and raised
 breeding
 livestock are



Table 2-6 p. 1

The Average AgFA© Farm Earnings Report for the Bottom Half of Great Lakes Graziers.
The 50 Bottom Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per
CWT EQ.

Income	2003 per Farm	2003 per Cow	2003 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	202,557.28	2,058.93	10.09
Raised Non-Breeding Livestock Sales	6,886.12	70.00	0.34
Crop Sales	2,381.00	24.20	0.12
Distributions Received from Cooperatives	567.86	5.77	0.03
Agricultural Program Payments	17,217.40	175.01	0.86
MILC Program Payments	4,084.92	41.52	0.20
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	998.02	10.14	0.05
Other Income, Incl. Tax Credits, Refunds	3,608.58	36.68	0.18
Basis in Breeding Livestock Sold	(988.18)	(10.04)	(0.05)
Sale of Raised Breeding Livestock	14,194.92	144.29	0.71
Total Cash Income - Basis Adjustments	251,507.92	2,556.49	12.53
Non-Cash Income			
Change in Raised Crop Inventories	12.62	0.13	0.00
Change in Remaining Current Assets	(483.04)	(4.91)	(0.02)
Change in Raised Breeding Livestock	(166.09)	(1.69)	(0.01)
Total Non-Cash Income	(636.51)	(6.47)	(0.03)
Total Income	250,871.41	2,550.02	12.50



Table 2-6 p. 2

The Average AgFA® Farm Earnings Report for the Bottom Half of Great Lakes Graziers.
The 50 Bottom Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT EQ.

Expenses	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Expense			
Cost of Items for Resale	210.26	2.14	0.01
Breeding Fees	2,560.80	26.03	0.13
Car and Truck Expenses	707.72	7.19	0.04
Chemicals	1,142.18	11.61	0.06
Conservation Expenses	170.50	1.73	0.01
Custom Heifer Raising Expenses	0.00	0.00	0.00
Custom Hire (Machine Work)	8,582.40	87.24	0.43
Employee Benefits - Dependents	202.78	2.06	0.01
Employee Benefits - Non-Dependents	748.44	7.61	0.04
Feed Purchase	60,473.78	614.70	3.01
Fertilizer and Lime	7,454.70	75.77	0.37
Freight and Trucking	2,142.40	21.78	0.11
Gasoline, Fuel, and Oil	6,030.12	61.29	0.30
Farm Insurance	4,438.18	45.11	0.22
Mortgage Interest	9,860.28	100.23	0.49
Other Interest	3,080.68	31.31	0.15
Labor Hired - Dependents	582.68	5.92	0.03
Labor Hired - Non-Dependents	20,596.14	209.35	1.03
Pension and Profit-Sharing Plans - Non-	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Rent/Lease Equipment	1,646.04	16.73	0.08
Rent/Lease Other	6,084.42	61.85	0.30
Repairs and Maintenance	12,710.34	129.20	0.63
Building and Fence Repairs	1,829.62	18.60	0.09
Machinery Repairs	870.76	8.85	0.04
Seeds and Plants Purchased	3,934.28	39.99	0.20
Storage and Warehousing	8.24	0.08	0.00
Supplies Purchased	6,943.12	70.57	0.35
Taxes - Other	3,945.54	40.11	0.20
Taxes - Payroll	13.82	0.14	0.00
Utilities	6,202.88	63.05	0.31
Veterinary Fees and Medicine	6,179.26	62.81	0.31
Other Farm Expenses	6,796.68	69.09	0.34
Marketing & Hedging	8,198.12	83.33	0.41
Other Crop Expenses	1,023.92	10.41	0.05
Other Livestock Expenses	9,306.64	94.60	0.46
Total Cash Expense	204,677.72	2,080.48	10.20
Non-Cash Expenses			
- Change in Prepaid Expenses	734.58	7.47	0.04
Change in Accounts Payable	1,530.48	15.56	0.08
Machinery, Equipment and Building Depreciation	22,988.56	233.67	1.15
Livestock Depreciation	2,690.94	27.35	0.13
Total Non-Cash Expenses	27,944.56	284.05	1.39
Total Expenses	232,622.28	2,364.53	11.59
Net Farm Income From Operations (NFIFO)	18,249.13	185.50	0.91
Gain (Loss) on Sale of All Farm Capital Assets	780.98	7.94	0.04
Net Farm Income (NFI)	19,030.11	193.43	0.95



Table 2-7 p. 1

The Average AgFA© Cost of Production Report for the Bottom Half of Great Lakes Graziers.
The 50 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	2003 per Farm	2003 per Cow	2003 per CWT EQ
Total Income	250,871.41	17.18	12.50
Expenses			
Basic Cost			
Cost of Items for Resale	210.26	0.01	0.01
Breeding Fees	2,560.80	0.18	0.13
Car and Truck Expenses	707.72	0.05	0.04
Chemicals	1,142.18	0.08	0.06
Conservation Expenses	170.50	0.01	0.01
Custom Heifer Raising Expenses	0.00	0.00	0.00
Custom Hire (Machine Work)	8,582.40	0.59	0.43
Feed Purchase	60,473.78	4.14	3.01
Fertilizer and Lime	7,454.70	0.51	0.37
Freight and Trucking	2,142.40	0.15	0.11
Gasoline, Fuel, and Oil	6,030.12	0.41	0.30
Farm Insurance	4,438.18	0.30	0.22
Rent/Lease Equipment	1,646.04	0.11	0.08
Rent/Lease Other	6,084.42	0.42	0.30
Repairs and Maintenance	12,710.34	0.87	0.63
Building and Fence Repairs	1,829.62	0.13	0.09
Machinery Repairs	870.76	0.06	0.04
Seeds and Plants Purchased	3,934.28	0.27	0.20
Storage and Warehousing	8.24	0.00	0.00
Supplies Purchased	6,943.12	0.48	0.35
Taxes - Other	3,945.54	0.27	0.20
Taxes - Payroll	13.82	0.00	0.00
Utilities	6,202.88	0.42	0.31
Veterinary Fees and Medicine	6,179.26	0.42	0.31
Other Farm Expenses	6,796.68	0.47	0.34
Marketing & Hedging	8,198.12	0.56	0.41
Other Crop Expenses	1,023.92	0.07	0.05
Other Livestock Expenses	9,306.64	0.64	0.46
- Change in Prepaid Expenses	734.58	0.05	0.04
Change in Accounts Payable	1,530.48	0.10	0.08
Depreciation on Purchased Breeding	2,690.94	0.18	0.13
Total Basic Cost	174,562.72	11.95	8.70



Table 2-7 p. 2

The Average AgFA© Cost of Production Report for the Bottom Half of Great Lakes Graziers.
The 50 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.

Interest Cost	2003 per Farm	2003 per Cow	2003 per CWT EQ
Mortgage Interest	9,860.28	0.68	0.49
Other Interest	3,080.68	0.21	0.15
Total Interest Cost	12,940.96	0.89	0.64
Labor Cost			
Employee Benefits - Dependents	202.78	0.01	0.01
Employee Benefits - Non-Dependents	748.44	0.05	0.04
Labor Hired - Dependents	582.68	0.04	0.03
Labor Hired - Non-Dependents	20,596.14	1.41	1.03
Pension and Profit-Sharing Plans - Non-Dependents	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Value of Unpaid Labor & Management	36,241.08	2.48	1.81
Total Labor Cost	58,371.12	4.00	2.91
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	22,988.56	1.57	1.15
Interest on Equity Capital	24,917.88	1.71	1.24
Total Depreciation & Equity Cost	47,906.44	3.28	2.39
Total Expenses	293,781.24	20.12	14.64
Total Income - Total Expenses	(42,909.82)	(2.94)	(2.14)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	232,622.28	15.93	11.59
Net Farm Income From Operations (NFIFO)	18,249.13	1.25	0.91
Gain (Loss) on Sale of All Farm Capital Assets	780.98	0.05	0.04
Net Farm Income (NFI)	19,030.11	1.30	0.95



Table 2-8 p. 1

**The Average AgFA© Financial Measures Report for the Bottom Half of Great Lakes Graziers.
The 50 Bottom Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per
CWT EQ.**

These Financial Measures Were Calculated Using the Cost Basis of Assets and Cost (Tax) Depreciation

The financial calculations using the Market Basis of Assets and Economic Depreciation are on the following page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$18,249.13	\$185.50	\$0.91
Net Farm Income	\$19,030.11	\$193.43	\$0.95
Rate of Return on Assets (ROROA)	-1.86%	-1.86%	-1.86%
Cost (Tax) Depreciation Claimed	\$25,679.50	\$261.02	\$1.28
Rate of Return on Equity	-16.03%	-0.1603	-0.1603
Net Profit Margin	-1.68 %	-1.68 %	-1.68 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.231	1.231	
Note: Some methods of calculating Basic Cost Ratio	0.696	0.696	0.696
ratios combine the Basic Cost and Wages Wages Paid Ratio	0.088	0.088	0.088
Paid Ratios into a single Interest Paid Ratio	0.052	0.052	0.052
ratio (Operating Cost Ratio). Depreciation Ratio	0.092	0.092	0.092
Net Farm Income from Operations Ratio	0.073	0.073	0.073
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$32,213.25	\$327.44	\$1.61
Coverage Margin	\$-14,076.98	\$-143.09	\$-0.70
Term Debt Coverage Ratio	1.26	1.26	1.26
Liquidity			
Net Cash Income	\$47,818.38	\$486.06	\$2.38
Working Capital	\$11,113.13	\$112.96	
Current Ratio	1.24	1.24	1.24
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$369,558.79	\$3,756.44	\$18.41
Beginning Total Farm Liabilities	\$242,300.56	\$2,462.90	\$12.07
Beginning Farm Net Worth	\$127,258.23	\$1,293.54	
Farm Debt to Asset Ratio - Beginning of Year	0.702	0.702	0.702
Ending Total Farm Assets	\$380,641.14	\$3,869.09	\$18.97
Ending Total Farm Liabilities	\$259,420.87	\$2,636.93	\$12.93
Ending Farm Net Worth	\$121,220.27	\$1,232.16	\$6.04
Year Ending Farm Debt to Asset Ratio	0.682	0.682	0.682
Cost Basis Change in Farm Net Worth	\$-6,037.96	\$-61.37	\$-0.30



Table 2-8 p. 2

**The Average AgFA© Financial Measures Report for the Bottom Half of Great Lakes Graziers.
The 50 Bottom Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per
CWT EQ.**

These Financial Measures Were Calculated Using the Market Value of Assets and Economic Depreciation

The financial calculations using the Cost Basis of Assets and Cost (Tax) Depreciation are on the previous page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$35,945.71	\$365.38	\$1.79
Net Farm Income	\$36,726.69	\$373.31	\$1.83
Rate of Return on Assets (ROROA)	1.79 %	1.79 %	1.79 %
Economic Depreciation Claimed	\$8,038.92	\$81.71	\$0.40
Rate of Return on Equity	0.10 %	0.10 %	0.10 %
Net Profit Margin	5.35 %	5.35 %	5.35 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.335	0.335	0.335
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.694	0.694	0.694
	Wages Paid Ratio 0.088	0.088	0.088
	Interest Paid Ratio 0.052	0.052	0.052
	Depreciation Ratio 0.023	0.023	0.023
Net Farm Income from Operations Ratio	0.143	0.143	0.143
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$32,213.25	\$304.39	\$1.49
Coverage Margin	-\$14,076.98	-\$143.09	-\$0.70
Term Debt Coverage Ratio	1.26	1.20	1.20
Liquidity			
Net Cash Income	\$47,818.38	\$486.06	\$2.38
Working Capital	\$11,113.13	\$112.96	\$0.55
Current Ratio	1.24	1.24	1.24
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$726,638.09	\$7,386.03	\$36.21
Beginning Total Farm Liabilities	\$242,300.56	\$2,462.90	\$12.07
Beginning Farm Net Worth	\$484,337.53	\$4,923.13	\$24.13
Farm Debt to Asset Ratio - Beginning of Year	0.333	0.333	0.333
Ending Total Farm Assets	\$771,694.40	\$7,844.02	\$38.45
Ending Total Farm Liabilities	\$259,420.87	\$2,636.93	\$12.93
Ending Farm Net Worth	\$512,273.53	\$5,207.09	\$25.52
Year Ending Farm Debt to Asset Ratio	0.336	0.336	0.336
Total Change in Farm Net Worth	\$27,936.00	\$283.96	\$1.39



Table 2-9

The Average AgFA© Balance Sheet Report for the Bottom Half of Great Lakes Graziers in 2003. Showing the Current Market Values and Historic Cost Values of Assets. The 50 Bottom Half Graziers were sorted by Net Farm Income from Operations (NFIFO) per CWT EQ.

	<u>Beg.</u> <u>Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	6,176	9,926		
Prepaid Expenses & Purchased	5,708	4,973		
Raised Feed Inventories	31,394	31,406		
Basis in Resale Livestock Purchased	0	33		
Accounts Receivable	7,940	7,914		
Market Livestock & Etc.	3,999	3,543		
Total Current Assets	55,217	57,795		
Non-Current Assets			<u>Beg.</u> <u>Dollars</u>	<u>End</u> <u>Dollars</u>
Raised Breeding Livestock	171,351	171,185		
Purchased Breeding Livestock	1,169	1,172	4,951	4,530
Machinery & Equipment	111,815	118,500	29,245	31,444
Buildings	44,143	49,939	26,038	31,854
Land & House	257,328	277,433	62,302	64,203
Other Non-Current Assets	85,616	95,671	20,456	19,630
Total Non-Current Assets	671,421	713,900	142,991	151,661
Total Farm Assets	726,638	771,694		
Current Liabilities				
Accounts Payable	10,897	12,371		
Current Portion of Non-Current	22,756	20,673		
Other Current Liabilities	11,682	13,637		
Total Current Liabilities	45,335	46,682		
Non-Current Liabilities				
Intermediate Liabilities	27,247	26,694		
Long-Term Liabilities	169,719	186,046		
Contingent Liabilities	151,481	159,740		
Total Non-Current Liabilities	348,447	372,480		
Total Farm Liabilities	393,782	419,161		
Non-Farm Assets	37,049	38,978		
Non-Farm Liabilities	1,079	882		

Statement of Equities (Net Worth)

	<u>Beginnin</u>	<u>Change</u>	
Contributed	1,531	3,391	1,860
Retained Earnings 1	125,727	117,829	-7,898
	205,598	231,313	25,715
Total Farm Equities	332,856	352,533	19,677
Non-Farm Equities	35,970	38,096	2,126
Total Equities	368,826	390,629	21,803

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

XIV. Comparing Herds by Size: Less Than 100 Cows vs. 100 Cows or More

The average “large” herd in 2003 had about three times as many cows, produced about ten percent less milk per Cow, and was less profitable on a per Cow and a per CWT EQ basis. The average “large” farm produced more total dollars of NFIFO per farm. For most basic cost items, the larger herds spent less per CWT EQ than the smaller herds except for purchased feed, fertilizer and lime, gasoline, fuel and oil, repairs, seed, marketing, other crop, farm and livestock expenses, and changes in accounts payable.

Overall, the smaller herds had a \$0.25 disadvantage in basic cost per CWT EQ but a \$0.49 per CWT EQ advantage in the four non-basic cost categories that are added to the basic cost category to create the allocated cost category. More specifically, the smaller herds spent \$0.04 per CWT EQ more for interest, \$0.74 per CWT EQ less for paid labor and management, and \$0.21 more per CWT EQ for depreciation than the large herds.

This accounts for the \$0.24 (\$2.23-\$1.99) overall advantage that the smaller herds had in NFIFO per CWT EQ.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 3-1 Comparing Herds by Size: Less Than 100 vs. 100 Cows or More/ Most Performance Measures Selected from Tables 3-2 to 3-9			
	Less than 100 Cows	100 Cows or More	2003 Average
Number of Herds	77	25	102
Number of Cows per Herd	57	180	87
Average Lbs. Milk per Cow	16,081	14,691	15,381
Average Lbs. Milk per Herd	924,568	2,638,474	1,344,643
Group Average Mailbox Milk Price	\$14.22	\$14.58	\$14.39
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.50	\$12.50	\$12.50
Average Basic Cost per CWT EQ	\$7.91	\$7.66	\$7.79
Allocated Cost per CWT EQ	\$10.27	\$10.51	\$10.39
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.36	\$2.85	\$2.60
NFIFO per Cow (without deducting any labor compensation)	\$648	\$689	\$662
NFIFO per CWT EQ (without deducting any labor compensation)	\$2.83	\$3.33	\$3.07
NFIFO per Farm	\$29,335	\$74,215	\$40,335
NFIFO per Cow	\$510	\$413	\$461
NFIFO per CWT EQ	\$2.23	\$1.99	\$2.11

*See Chapters IX and X for more information about CWT EQ and cost categories.

The larger herds cost of paid labor, which is \$0.74 per CWT EQ higher, provides the smaller herds all of their advantage in NFIFO per CWT EQ. For the first time in four years if all labor expenses were omitted, the smaller herd size would have a lower NFIFO per CWT EQ and per Cow as shown above.

Tables 3-2 to 3-9 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 3-2 p. 1

The Average AgFA© Farm Earnings Report for the 77 Great Lakes Graziers with Less than 100 Cows

Income	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	3.32	0.06	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	131,792.07	2,292.29	10.00
Raised Non-Breeding Livestock Sales	4,775.97	83.07	0.36
Crop Sales	1,347.03	23.43	0.10
Distributions Received from Cooperatives	630.81	10.97	0.05
Agricultural Program Payments	10,866.08	189.00	0.82
MILC Program Payments	3,596.47	62.55	0.27
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	736.95	12.82	0.06
Other Income, Incl. Tax Credits, Refunds	2,379.12	41.38	0.18
Sale of Purchased Breeding Livestock	257.97	4.49	0.02
Basis in Breeding Livestock Sold	(820.40)	(14.27)	(0.06)
Sale of Raised Breeding Livestock	8,248.75	143.47	0.63
Total Cash Income - Basis Adjustments	163,814.14	2,849.26	12.43
Non-Cash Income			
Change in Raised Crop Inventories	(422.76)	(7.35)	(0.03)
Change in Remaining Current Assets	172.52	3.00	0.01
Change in Raised Breeding Livestock	1,232.66	21.44	0.09
Total Non-Cash Income	982.41	17.09	0.07



Table 3-2 p. 2
The Average AgFA® Farm Earnings Report for the 77 Great Lakes Graziers with Less than 100 Cows

Expenses	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Expense			
Cost of Items for Resale	101.91	1.77	0.01
Breeding Fees	2,104.87	36.61	0.16
Car and Truck Expenses	779.54	13.56	0.06
Chemicals	836.84	14.56	0.06
Conservation Expenses	110.71	1.93	0.01
Custom Heifer Raising Expenses	38.96	0.68	0.00
Custom Hire (Machine Work)	4,462.79	77.62	0.34
Employee Benefits - Dependents	131.68	2.29	0.01
Employee Benefits - Non-Dependents	646.38	11.24	0.05
Feed Purchase	37,629.60	654.50	2.85
Fertilizer and Lime	3,324.52	57.82	0.25
Freight and Trucking	2,152.70	37.44	0.16
Gasoline, Fuel, and Oil	3,828.51	66.59	0.29
Farm Insurance	2,926.24	50.90	0.22
Mortgage Interest	5,827.84	101.37	0.44
Other Interest	1,401.87	24.38	0.11
Labor Hired - Dependents	798.96	13.90	0.06
Labor Hired - Non-Dependents	6,363.21	110.68	0.48
Pension and Profit-Sharing Plans - Non-Dependents	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Rent/Lease Equipment	859.56	14.95	0.07
Rent/Lease Other	2,274.70	39.56	0.17
Repairs and Maintenance	7,947.89	138.24	0.60
Building and Fence Repairs	1,554.81	27.04	0.12
Machinery Repairs	764.56	13.30	0.06
Seeds and Plants Purchased	2,039.96	35.48	0.15
Storage and Warehousing	6.94	0.12	0.00
Supplies Purchased	4,453.45	77.46	0.34
Taxes - Other	3,120.44	54.27	0.24
Taxes - Payroll	43.14	0.75	0.00
Utilities	4,525.63	78.72	0.34
Veterinary Fees and Medicine	3,718.87	64.68	0.28
Other Farm Expenses	3,185.08	55.40	0.24
Marketing & Hedging	4,650.22	80.88	0.35
Other Crop Expenses	402.79	7.01	0.03
Other Livestock Expenses	4,271.41	74.29	0.32
Total Cash Expense	117,286.58	2,040.00	8.90
Non-Cash Expenses			
- Change in Prepaid Expenses	(444.74)	(7.74)	(0.03)
Change in Accounts Payable	1,315.60	22.88	0.10
Machinery, Equipment and Building Depreciation	16,027.58	278.77	1.22
Livestock Depreciation	1,276.44	22.20	0.10
Total Non-Cash Expenses	18,174.88	316.12	1.38
Total Expenses	135,461.47	2,356.12	10.27
Net Farm Income From Operations (NFIFO)	29,335.08	510.23	2.23
Gain (Loss) on Sale of All Farm Capital Assets	331.04	5.76	0.03
Net Farm Income (NFI)	29,666.12	515.99	2.25



Table 3-3 p. 1

The Average Cost of Production Report for the 77 Great Lakes Graziers with Less than 100 Cows. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Income		2003	2003	2003
		<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
	Total Income	164,796.55	17.82	12.50
Expenses				
Basic Cost				
	Cost of Items for Resale	101.91	0.01	0.01
	Breeding Fees	2,104.87	0.23	0.16
	Car and Truck Expenses	779.54	0.08	0.06
	Chemicals	836.84	0.09	0.06
	Conservation Expenses	110.71	0.01	0.01
	Custom Heifer Raising Expenses	38.96	0.00	0.00
	Custom Hire (Machine Work)	4,462.79	0.48	0.34
	Feed Purchase	37,629.60	4.07	2.85
	Fertilizer and Lime	3,324.52	0.36	0.25
	Freight and Trucking	2,152.70	0.23	0.16
	Gasoline, Fuel, and Oil	3,828.51	0.41	0.29
	Farm Insurance	2,926.24	0.32	0.22
	Rent/Lease Equipment	859.56	0.09	0.07
	Rent/Lease Other	2,274.70	0.25	0.17
	Repairs and Maintenance	7,947.89	0.86	0.60
	Building and Fence Repairs	1,554.81	0.17	0.12
	Machinery Repairs	764.56	0.08	0.06
	Seeds and Plants Purchased	2,039.96	0.22	0.15
	Storage and Warehousing	6.94	0.00	0.00
	Supplies Purchased	4,453.45	0.48	0.34
	Taxes - Other	3,120.44	0.34	0.24
	Taxes - Payroll	43.14	0.00	0.00
	Utilities	4,525.63	0.49	0.34
	Veterinary Fees and Medicine	3,718.87	0.40	0.28
	Other Farm Expenses	3,185.08	0.34	0.24
	Marketing & Hedging	4,650.22	0.50	0.35
	Other Crop Expenses	402.79	0.04	0.03
	Other Livestock Expenses	4,271.41	0.46	0.32
	- Change in Prepaid Expenses	(444.74)	(0.05)	(0.03)
	Change in Accounts Payable	1,315.60	0.14	0.10
	Depreciation on Purchased Breeding Livestock	1,276.44	0.14	0.10
	Total Basic Cost	104,263.95	11.28	7.91



Table 3-3 p. 2

The Average Cost of Production Report for the 77 Great Lakes Graziers with Less than 100 Cows. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

	2003 per Farm	2003 per Cow	2003 per CWT EQ
Interest Cost			
Mortgage Interest	5,827.84	0.63	0.44
Other Interest	1,401.87	0.15	0.11
Total Interest Cost	7,229.71	0.78	0.55
Labor Cost			
Employee Benefits - Dependents	131.68	0.01	0.01
Employee Benefits - Non-Dependents	646.38	0.07	0.05
Labor Hired - Dependents	798.96	0.09	0.06
Labor Hired - Non-Dependents	6,363.21	0.69	0.48
Pension and Profit-Sharing Plans - Non-Dependents	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Value of Unpaid Labor & Management	33,601.35	3.63	2.55
Total Labor Cost	41,541.57	4.49	3.15
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	16,027.58	1.73	1.22
Interest on Equity Capital	21,988.62	2.38	1.67
Total Depreciation & Equity Cost	38,016.20	4.11	2.88
Total Expenses	191,051.44	20.66	14.49
Total Income - Total Expenses	(26,254.89)	(2.84)	(1.99)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	135,461.47	14.651332	10.27
Net Farm Income From Operations (NFIFO)	29,335.08	3.17	2.23
Gain (Loss) on Sale of All Farm Capital Assets	331.04	0.04	0.03
Net Farm Income (NFI)	29,666.12	3.21	2.25



Table 3-4 p. 1

The Average AgFA© Financial Measures Report for the 77 Great Lakes Graziers with less than 100 Cows.

These Financial Measures Were Calculated Using the Cost Basis of Assets and Cost (Tax) Depreciation

The financial calculations using the Market Basis of Assets and Economic Depreciation are on the following page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$29,335.08	\$510.23	\$2.23
Net Farm Income	\$29,666.12	\$515.99	\$2.25
Rate of Return on Assets (ROROA)	2.33%	2.33%	2.33%
Cost (Tax) Depreciation Claimed	\$17,304.02	\$300.97	\$1.31
Rate of Return on Equity	-16.39 %	-16.39 %	-16.39 %
Net Profit Margin	2.02 %	2.02 %	2.02 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.023	1.023	1.023
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).			
Basic Cost Ratio	0.632	0.632	0.632
Wages Paid Ratio	0.048	0.048	0.048
Interest Paid Ratio	0.044	0.044	0.044
Depreciation Ratio	0.097	0.097	0.097
Net Farm Income from Operations Ratio	0.178	0.178	0.178
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$29,599.73	\$514.84	\$2.25
Coverage Margin	\$7,073.15	\$123.03	\$0.54
Term Debt Coverage Ratio	1.64	1.64	1.64
Liquidity			
Net Cash Income	\$47,347.96	\$823.54	\$3.59
Working Capital	\$14,798.15	\$257.39	\$1.12
Current Ratio	1.62	1.62	1.62
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$260,612.66	\$4,532.91	\$19.77
Beginning Total Farm Liabilities	\$132,824.96	\$2,310.26	\$10.07
Beginning Farm Net Worth	\$127,787.70	\$2,222.65	\$9.69
Farm Debt to Asset Ratio - Beginning of Year	0.544	0.544	0.544
Ending Total Farm Assets	\$272,331.91	\$4,736.74	\$20.66
Ending Total Farm Liabilities	\$141,787.95	\$2,466.16	\$10.75
Ending Farm Net Worth	\$130,543.96	\$2,270.59	\$9.90
Year Ending Farm Debt to Asset Ratio	0.521	0.521	0.521
Cost Basis Change in Farm Net Worth	\$2,756.27	\$47.94	\$0.21



Table 3-4 p. 2

The Average AgFA© Financial Measures Report for the 77 Great Lakes Graziers with less than 100 Cows.

These Financial Measures Were Calculated Using the Market Value of Assets and Economic

The financial calculations using the Cost Basis of Assets and Cost (Tax) Depreciation are on the previous page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$44,221.17	\$769.15	\$3.35
Net Farm Income	\$44,552.21	\$774.91	\$3.38
Rate of Return on Assets (ROROA)	3.15 %	3.15 %	3.15 %
Economic Depreciation Claimed	\$2,454.30	\$42.69	\$0.19
Rate of Return on Equity	2.49 %	2.49 %	2.49 %
Net Profit Margin	11.03 %	11.03 %	11.03 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.286	0.286	0.286
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.630	0.630	0.630
	Wages Paid Ratio 0.048	0.048	0.048
	Interest Paid Ratio 0.044	0.044	0.044
	Depreciation Ratio 0.010	0.010	0.010
Net Farm Income from Operations Ratio	0.268	0.268	0.268
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$29,599.73	\$500.05	\$2.18
Coverage Margin	\$7,073.15	\$123.03	\$0.54
Term Debt Coverage Ratio	1.64	1.60	1.60
Liquidity			
Net Cash Income	\$47,347.96	\$823.54	\$3.59
Working Capital	\$14,798.15	\$257.39	\$1.12
Current Ratio	1.62	1.62	1.62
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$558,216.24	\$9,709.21	\$42.34
Beginning Total Farm Liabilities	\$132,824.96	\$2,310.26	\$10.07
Beginning Farm Net Worth	\$425,391.28	\$7,398.94	\$32.27
Farm Debt to Asset Ratio - Beginning of Year	0.238	0.238	0.238
Ending Total Farm Assets	\$595,873.95	\$10,364.20	\$45.20
Ending Total Farm Liabilities	\$141,787.95	\$2,466.16	\$10.75
Ending Farm Net Worth	\$454,086.01	\$7,898.04	\$34.44
Year Ending Farm Debt to Asset Ratio	0.238	0.238	0.238



Table 3-5

The Average AgFA© Balance Sheet for the 77 Great Lakes Graziers in 2003 with less than 100 Cows, Showing Current Market Values and Historic Cost Values in Assets.

	<u>Beg.</u> <u>Dollars</u>	<u>End</u> <u>Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	4,919	7,406		
Prepaid Expenses & Purchased Inventories	4,657	5,101		
Raised Feed Inventories	19,980	19,557		
Basis in Resale Livestock Purchased	0	21		
Accounts Receivable	4,258	4,500		
Market Livestock & Etc.	1,964	1,894		
Total Current Assets	35,778	38,480		
Non-Current Assets			<u>Beg.</u> <u>Dollars</u>	<u>End</u> <u>Dollars</u>
Raised Breeding Livestock	104,767	105,999		
Purchased Breeding Livestock	759	761	3,600	3,176
Machinery & Equipment	87,525	93,184	21,371	24,582
Buildings	46,582	50,552	23,926	27,715
Land & House	187,677	200,174	48,955	50,537
Other Non-Current Assets	95,128	106,724	22,216	21,842
Total Non-Current Assets	522,438	557,394	120,068	127,852
Total Farm Assets	558,216	595,874		
Current Liabilities				
Accounts Payable	2,156	3,436		
Current Portion of Non-Current Liabilities	15,203	13,981		
Other Current Liabilities	4,368	6,266		
Total Current Liabilities	21,727	23,682		
Non-Current Liabilities				
Intermediate Liabilities	16,480	18,535		
Long-Term Liabilities	94,618	99,570		
Contingent Liabilities	113,203	120,224		
Total Non-Current Liabilities	224,300	238,330		
Total Farm Liabilities	246,027	262,012		
Non-Farm Assets	40,603	42,324		
Non-Farm Liabilities	2,090	2,444		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	994	2,540	1,545
Retained Earnings ¹	126,794	128,004	1,211
Valuation Adjustment	184,401	203,318	18,917
Total Farm Equities	312,189	333,862	21,673
Non-Farm Equities	38,513	39,880	1,367
Total Equities	350,701	373,742	23,040

¹ All current assets and raised breeding livestock are included in retained earnings.



Table 3-6 p. 1

The Average AgFA© Farm Earnings Report for the 25 Great Lakes Graziers with 100 or More Cows

Income	2003 <u>per Farm</u>	2003 <u>per Cow</u>	2003 <u>per CWT EQ</u>
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	371,350.33	2,067.65	9.97
Raised Non-Breeding Livestock Sales	11,202.36	62.37	0.30
Crop Sales	3,210.80	17.88	0.09
Distributions Received from Cooperatives	557.25	3.10	0.01
Agricultural Program Payments	25,803.80	143.67	0.69
MILC Program Payments	4,522.64	25.18	0.12
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	1,330.48	7.41	0.04
Other Income, Incl. Tax Credits, Refunds	4,630.56	25.78	0.12
Sale of Purchased Breeding Livestock	28.95	0.16	0.00
Basis in Breeding Livestock Sold	(349.00)	(1.94)	(0.01)
Sale of Raised Breeding Livestock	20,236.52	112.68	0.54
Total Cash Income - Basis Adjustments	442,524.70	2,463.95	11.88
Non-Cash Income			
Change in Raised Crop Inventories	14,674.63	81.71	0.39
Change in Remaining Current Assets	(106.32)	(0.59)	(0.00)
Change in Raised Breeding Livestock	8,366.08	46.58	0.22
Total Non-Cash Income	22,934.39	127.70	0.62



Table 3-6 p. 2

The Average AgFA© Farm Earnings Report for the 25 Great Lakes Graziers with 100 or More Cows

Expenses	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Expense			
Cost of Items for Resale	285.80	1.59	0.01
Breeding Fees	4,047.02	22.53	0.11
Car and Truck Expenses	199.76	1.11	0.01
Chemicals	1,645.08	9.16	0.04
Conservation Expenses	0.00	0.00	0.00
Custom Heifer Raising Expenses	0.00	0.00	0.00
Custom Hire (Machine Work)	10,750.07	59.86	0.29
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	0.00	0.00	0.00
Feed Purchase	107,477.10	598.42	2.89
Fertilizer and Lime	13,402.62	74.62	0.36
Freight and Trucking	1,759.92	9.80	0.05
Gasoline, Fuel, and Oil	10,987.59	61.18	0.30
Farm Insurance	6,708.24	37.35	0.18
Mortgage Interest	14,080.64	78.40	0.38
Other Interest	4,931.91	27.46	0.13
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	49,460.75	275.39	1.33
Pension and Profit-Sharing Plans - Dependents	240.00	1.34	0.01
Rent/Lease Equipment	2,270.92	12.64	0.06
Rent/Lease Other	13,713.64	76.36	0.37
Repairs and Maintenance	27,752.77	154.53	0.75
Building and Fence Repairs	622.68	3.47	0.02
Machinery Repairs	967.12	5.38	0.03
Seeds and Plants Purchased	6,922.25	38.54	0.19
Supplies Purchased	10,037.51	55.89	0.27
Taxes - Other	6,799.50	37.86	0.18
Taxes - Payroll	32.39	0.18	0.00
Utilities	9,303.98	51.80	0.25
Veterinary Fees and Medicine	10,123.35	56.37	0.27
Other Farm Expenses	11,412.84	63.55	0.31
Marketing & Hedging	14,876.21	82.83	0.40
Other Crop Expenses	1,387.56	7.73	0.04
Other Livestock Expenses	15,327.12	85.34	0.41
Selling Expense of Capital Items	33.39	0.19	0.00
Total Cash Expense	357,559.74	1,990.87	9.60
Non-Cash Expenses			
- Change in Prepaid Expenses	(5,131.25)	(28.57)	(0.14)
Change in Accounts Payable	(760.49)	(4.23)	(0.02)
Machinery, Equipment and Building Depreciation	37,312.68	207.75	1.00
Livestock Depreciation	2,263.87	12.61	0.06
Total Non-Cash Expenses	33,684.80	187.55	0.90
Total Expenses	391,244.53	2,178.42	10.51
Net Farm Income From Operations (NFIFO)	74,214.56	413.22	1.99
Gain (Loss) on Sale of All Farm Capital Assets	2,250.19	12.53	0.06
Net Farm Income (NFI)	76,464.75	425.75	2.05



Table 3-7 p. 1

The Average Cost of Production Report for the 25 Great Lakes Graziers with 100 or more Cows. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Income		2003	2003	2003
		<u>Cost (tax)</u>	<u>per CWT Sold</u>	<u>per CWT EQ</u>
Total Income		465,459.09	17.64	12.50
Expenses				
Basic Cost				
Cost of Items for Resale		285.80	0.01	0.01
Breeding Fees		4,047.02	0.15	0.11
Car and Truck Expenses		199.76	0.01	0.01
Chemicals		1,645.08	0.06	0.04
Conservation Expenses		0.00	0.00	0.00
Custom Heifer Raising Expenses		0.00	0.00	0.00
Custom Hire (Machine Work)		10,750.07	0.41	0.29
Feed Purchase		107,477.10	4.07	2.89
Fertilizer and Lime		13,402.62	0.51	0.36
Freight and Trucking		1,759.92	0.07	0.05
Gasoline, Fuel, and Oil		10,987.59	0.42	0.30
Farm Insurance		6,708.24	0.25	0.18
Rent/Lease Equipment		2,270.92	0.09	0.06
Rent/Lease Other		13,713.64	0.52	0.37
Repairs and Maintenance		27,752.77	1.05	0.75
Building and Fence Repairs		622.68	0.02	0.02
Machinery Repairs		967.12	0.04	0.03
Seeds and Plants Purchased		6,922.25	0.26	0.19
Supplies Purchased		10,037.51	0.38	0.27
Taxes - Other		6,799.50	0.26	0.18
Taxes - Payroll		32.39	0.00	0.00
Utilities		9,303.98	0.35	0.25
Veterinary Fees and Medicine		10,123.35	0.38	0.27
Other Farm Expenses		11,412.84	0.43	0.31
Marketing & Hedging		14,876.21	0.56	0.40
Other Crop Expenses		1,387.56	0.05	0.04
Other Livestock Expenses		15,327.12	0.58	0.41
- Change in Prepaid Expenses		(5,131.25)	(0.19)	(0.14)
Change in Accounts Payable		(760.49)	(0.03)	(0.02)
Selling Expense of Capital Items		33.39	0.00	0.00
Depreciation on Purchased Breeding Livestock		2,263.87	0.09	0.06
Total Basic Cost		285,218.55	10.81	7.66



Table 3-7 p. 2

The Average Cost of Production Report for the 25 Great Lakes Graziers with 100 or more Cows. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Interest Cost	2003 <u>Cost (tax)</u>	2003 <u>per CWT Sold</u>	2003 <u>per CWT EQ</u>
Mortgage Interest	14,080.64	0.53	0.38
Other Interest	4,931.91	0.19	0.13
Total Interest Cost	19,012.55	0.72	0.51
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	0.00	0.00	0.00
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	49,460.75	1.87	1.33
Pension and Profit-Sharing Plans - Dependents	240.00	0.01	0.01
Value of Unpaid Labor & Management	45,153.84	1.71	1.21
Total Labor Cost	94,854.59	3.60	2.55
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	37,312.68	1.41	1.00
Interest on Equity Capital	39,996.24	1.52	1.07
Total Depreciation & Equity Cost	77,308.92	2.93	2.08
Total Expenses	476,394.62	18.06	12.79
Total Income - Total Expenses	(10,935.52)	(0.41)	(0.29)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	391,244.53	14.82844201	10.51
Net Farm Income From Operations (NFIFO)	74,214.56	2.81	1.99
Gain (Loss) on Sale of All Farm Capital Assets	2,250.19	0.09	0.06
Net Farm Income (NFI)	76,464.75	2.90	2.05



Table 3-8 p. 1

The Average AgFA© Financial Measures Report for the 25 Great Lakes Graziers with 100 or more Cows

These Financial Measures Were Calculated Using the Cost Basis of Assets and Cost (Tax) Depreciation

The financial calculations using the Market Basis of Assets and Economic Depreciation are on the following page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$74,214.56	\$413.22	\$1.99
Net Farm Income	\$76,464.75	\$425.75	\$2.05
Rate of Return on Assets (ROROA)	17.23%	17.23%	17.23%
Cost (Tax) Depreciation Claimed	\$39,576.54	\$220.36	\$1.06
Rate of Return on Equity	35.70 %	35.70 %	35.70 %
Net Profit Margin	10.81 %		10.81 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.592	1.592	1.592
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).			
Basic Cost Ratio	0.613	0.613	0.613
Wages Paid Ratio	0.107	0.107	0.107
Interest Paid Ratio	0.041	0.041	0.041
Depreciation Ratio	0.080	0.080	0.080
Net Farm Income from Operations Ratio	0.159	0.159	0.159
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$93,750.14	\$521.99	\$2.52
Coverage Margin	\$18,045.96	\$100.48	\$0.48
Term Debt Coverage Ratio	2.11	2.11	2.11
Liquidity			
Net Cash Income	\$85,313.96	\$475.02	\$2.29
Working Capital	\$42,004.82	\$233.88	\$1.13
Current Ratio	1.53	1.53	1.53
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$567,432.72	\$3,159.42	\$15.24
Beginning Total Farm Liabilities	\$355,957.79	\$1,981.95	\$9.56
Beginning Farm Net Worth	\$211,474.93	\$1,177.48	\$5.68
Farm Debt to Asset Ratio - Beginning of Year	0.684	0.684	0.684
Ending Total Farm Assets	\$605,127.79	\$3,369.31	\$16.25
Ending Total Farm Liabilities	\$388,402.06	\$2,162.59	\$10.43
Ending Farm Net Worth	\$216,725.73	\$1,206.71	\$5.82
Year Ending Farm Debt to Asset Ratio	0.642	0.642	0.642
Cost Basis Change in Farm Net Worth	\$5,250.80	\$29.24	\$0.14



Table 3-8 p. 2

The Average AgFA© Financial Measures Report for the 25 Great Lakes Graziers with 100 or more Cows

Profitability	2003	2003	2003
	<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
Net Farm Income From Operations	\$91,753.20	\$510.88	\$2.46
Net Farm Income	\$94,003.39	\$523.40	\$2.52
Rate of Return on Assets (ROROA)	5.79 %	5.79 %	5.79 %
Economic Depreciation Claimed	\$22,037.90	\$122.71	\$0.59
Rate of Return on Equity	6.11 %	6.11%	6.11%
Net Profit Margin	14.58 %	14.58%	14.58%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.397	0.397	0.397
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.613	0.613	0.613
	Wages Paid Ratio 0.107	0.107	0.107
	Interest Paid Ratio 0.041	0.041	0.041
	Depreciation Ratio 0.043	0.043	0.043
Net Farm Income from Operations Ratio	0.197	0.197	0.197
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$93,750.14	\$509.72	\$2.46
Coverage Margin	\$18,045.96	\$100.48	\$0.48
Term Debt Coverage Ratio	2.11	2.07	2.07
Liquidity			
Net Cash Income	\$85,313.96	\$475.02	\$2.29
Working Capital	\$42,004.82	\$233.88	\$1.13
Current Ratio	1.53	1.53	1.53
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$1,125,790.14	\$6,268.32	\$30.23
Beginning Total Farm Liabilities	\$355,957.79	\$1,981.95	\$9.56
Beginning Farm Net Worth	\$769,832.35	\$4,286.37	\$20.67
Farm Debt to Asset Ratio - Beginning of Year	0.316	0.316	0.316
Ending Total Farm Assets	\$1,218,419.48	\$6,784.07	\$32.72
Ending Total Farm Liabilities	\$388,402.06	\$2,162.59	\$10.43
Ending Farm Net Worth	\$830,017.43	\$4,621.48	\$22.29
Year Ending Farm Debt to Asset Ratio	0.319	0.319	0.319
Total Change in Farm Net Worth	\$60,185.08	\$335.11	\$1.62



Table 3-9

The Average AgFA© Balance Sheet for the 25 Great Lakes Graziers in 2003 with 100 or more Cows, Showing the Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	13,518	16,887		
Prepaid Expenses & Purchased	11,174	16,305		
Raised Feed Inventories	49,710	64,385		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	18,532	19,760		
Market Livestock & Etc.	5,514	4,179		
Total Current Assets	98,448	121,517		
Non-Current Assets			<u>Beg.</u>	<u>End</u>
Raised Breeding Livestock	289,762	298,128	<u>Dollars</u>	<u>Dollars</u>
Purchased Breeding Livestock	368	468	338	403
Machinery & Equipment	168,872	176,178	35,320	32,908
Buildings	40,996	39,676	19,394	17,757
Land & House	454,812	502,409	101,853	113,601
Other Non-Current Assets	72,532	80,042	22,317	20,812
Total Non-Current Assets	1,027,342	1,096,902	179,222	185,482
Total Farm Assets	1,125,790	1,218,419		
Current Liabilities				
Accounts Payable	18,743	17,983		
Current Portion of Non-Current Liabilities	34,511	31,865		
Other Current Liabilities	22,101	29,664		
Total Current Liabilities	75,355	79,513		
Non-Current Liabilities				
Intermediate Liabilities	40,269	37,267		
Long-Term Liabilities	240,334	271,622		
Contingent Liabilities	245,180	267,893		
Total Non-Current Liabilities	525,782	576,783		
Total Farm Liabilities	601,137	656,295		
Non-Farm Assets	26,200	36,873		
Non-Farm Liabilities	1,223	1,359		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	0	0	0
Retained Earnings	211,475	216,726	5,251
Valuation Adjustment	313,178	345,398	32,221
Total Farm Equities	524,653	562,124	37,471
Non-Farm Equities	24,977	35,514	10,537
Total Equities	549,630	597,638	48,009

1 All current assets and raised breeding livestock are included in retained

XV. Why the Changes in the Seasonal Calving/Milking Strategy Comparison from 2000 to 2003?

Defined

In this study, a herd is considered to be employing the seasonal calving/milking system if they stop milking at least one day or more each calendar year. They may be referred to as simply “seasonal” hereafter. A semi-seasonal calving herd milks at least one cow every day of the year **and** makes a serious attempt to “bunch” their calving to one or two times of the year, but are less likely to cull healthy, productive animals that don't conceive in the preferred breeding window. Continuous calving herds distribute calving among most months of the year. Any calving strategies not meeting the seasonal definition is also referred to as non-seasonal in this analysis and is comprised of continuous and bunch calving (semi-seasonal) herds.

Challenge of Seasonal Calving/Milking

The biggest challenge in managing a seasonal dairy herd is maintaining a 12-month calving interval. There are three ways of maintaining the 12-month interval; (1) Shortening or increasing the voluntary waiting period to first breeding, (2) Shorten the lactation for cows that were late in breeding back and (3) Cull cows that do not fit the seasonal calving/milking strategy, requiring more raised or purchased replacements that are due to freshen in the appropriate calving window. The small number of seasonal herds in the dataset is an indicator of the challenge of maintaining the 12-month calving interval.

Comparing the Four Years

A lot of variability has appeared in the calving strategy comparison in this multi-state data from 2000 to 2003. The 2003 results are somewhat unique in that the NFIFO/Cow are nearly the same for seasonal and non-seasonal herds at \$462 and \$461 respectively. At the same time, the seasonal herds had a noticeable advantage in NFIFO/CWT EQ of \$2.58 versus \$2.01 in 2003.

In 2002, the non-seasonal herds returned to a nearly two-to-one advantage in NFIFO/Cow. The non-seasonal NFIFO/CWT EQ was 34% higher than the seasonal NFIFO/CWT EQ in 2002. This was similar to the results in 2000 where the non-seasonal herds had more than twice the NFIFO per CWT EQ and NFIFO per Cow.

However, in the 2001 multi-state data, the seasonal herds had almost 1.5 times the NFIFO per Cow and NFIFO per CWT EQ than the non-seasonal herds.

The highest non-seasonal NFIFO per Cow was twice as high as the highest seasonal NFIFO per Cow all years. The highest non-seasonal NFIFO per CWT EQ typically is 30 – 40% higher than the highest seasonal NFIFO per CWT EQ in most years.

The seasonal herds exhibit a smaller range in NFIFO per Cow and per CWT EQ than non-seasonal herds within a given year. In fact the non-seasonal range is typically at least double the seasonal range. In all years the high and low performances were in non-seasonal herds.

The lowest NFIFO per Cow and NFIFO per CWT EQ among the seasonal herds was higher than the lowest NFIFO per Cow and NFIFO per CWT EQ among the non-seasonal herds in 2001. Similar comparisons of range in financial performance exist in 2000, 2002, and 2003.

State-to-State Differences

Wisconsin has contributed less than half of the seasonal data but more than any other state. Most of the other seasonal data comes from states that contribute very little non-seasonal data. This could cause state-to-state differences (see Chapter VI) to influence the calving strategy results. Therefore, it is useful to compare the Wisconsin calving strategy comparison in these years to the multi-state comparison.

Comparing seasonal with non-seasonal herds from 1995 to 2000 in Wisconsin data, the non-seasonal herds generated an average of about twice as much NFIFO/Cow compared to seasonal herds.

From 2000 through 2002, the multi-state and Wisconsin comparisons were very similar in trend but in 2001, Wisconsin seasonal herds had just slightly higher NFIFO per Cow and NFIFO per CWT EQ than the non-seasonal herds.

In 2003, the 38 Wisconsin non-seasonal herds had a \$36 NFIFO/ Cow and \$0.11 NFIFO/CWT EQ advantage over the five Wisconsin seasonal herds.

In four years of multi-state data and nine years of Wisconsin data, no seasonal herd has attained the NFIFO/Cow or NFIFO/CWT EQ levels achieved by the highest performing non-seasonal herds, including 2001, a year in which (as explained later) the milk price pattern was extremely favorable for seasonal herds. When all the collected data are considered, it is more likely a non-seasonal herd will perform better than a seasonal herd in terms of economic profitability (NFIFO/Cow and NFIFO/CWT EQ).

Selection Bias Appears To Be A Major Factor In Explaining The Year-to-Year Differences

The number of summarized seasonal farms changed from 7 in 2000 to 18 in 2001 to 13 in 2002 and 14 in 2003. Of all the seasonal herds summarized in 2001, twice as many were new to the summary than were repeats from 2000. Since one of the seasonal herds in 2000 became semi-seasonal in 2001, twelve of the seasonal herds summarized in 2001 were not part of the 2000 seasonal summary. Many of the twelve new herds were well-established seasonal herds. This group of experienced seasonal graziers made their seasonal system function efficiently in 2001.

Of the 14 seasonal herds included in the 2003 summary, 10 were included in 2002, 9 were included in 2001, and 2 were included in 2000.

Of the 13 seasonal herds included in the 2002 summary, 10 were included in 2001 and two were included in 2000. The 10 seasonal herds repeating from 2001 are among the more experienced seasonal graziers that have participated in the study.

Because farms entered and left the study during the four years, some variation in comparison results is to be expected. Primarily because the sharing of farm financial data is a voluntary act, data is not collected via a random selection procedure. It is difficult to know if one year has a more representative sample than the other. In general, the larger the group, the more likely that the group is a representative sample. Also in general, most groups of less than 20 may not be representative of the larger population that they came from.

As one way of seeing the impact of herd turnover on the seasonal results, the 2001 data was summarized from the seven herds included in the seasonal group summary in 2001 and 2000. The 2001 results from this group were noticeably below average at \$429 NFIFO/Cow and \$2.40 NFIFO/CWT EQ. One of these seven herds dropped out of the seasonal group in 2001 by becoming semi-seasonal in 2001. A 2001 summary of the other six seasonal herds that were in the 2000 summary yields an average of \$650 NFIFO/Cow and \$3.53 NFIFO/CWT EQ—measures that are much higher than when the seventh herd was included and a bit above the all grazer average. The six seasonal herds that submitted data in both 2000 and 2001 are quite different from the 12 seasonal herds that were new to the summary in 2001. The 12 new herds had an average NFIFO/Cow of \$983 and an average NFIFO of \$5.32/CWT EQ.

The 2001 milk price pattern was more favorable for spring seasonal herds than for non-seasonal herds. There was an unusual pattern of higher prices in the spring months. The typical milk price pattern has higher milk prices in September, October and November. Milk prices in 2001 were lowest in January, February, November and December – the months of lowest milk output for most spring seasonal herds. All of the seasonal herds summarized in all years practice spring calving. In 2001, the summarized seasonal herds received a milk price that was \$1.36/CWT sold higher than received by the non-seasonal herds. In 2001, the Wisconsin seasonal herds averaged a milk price that was \$2.75/CWT higher than the Wisconsin non-seasonal herds. The multi-state "seasonal price advantage" has ranged from \$0.64 to -\$0.80 in the other three years. The pattern in Wisconsin was similar with a range of -\$0.30 to \$1.61 in the other three years. The "seasonal price advantage" for Wisconsin seasonal herds in the five previous years ranged from \$1.07 to -\$0.58.

In a few words, the financial performance of the average seasonal grazer in the 2001 data is likely to be a better indicator of what can be achieved under favorable conditions by experienced and highly capable managers committed to the seasonal system.

Furthermore, the financial performance of the average seasonal grazer in the 2001 data probably does not represent the kind of financial performance that less experienced or less capable managers could expect to achieve quickly and consistently while working toward the establishment of a seasonal system.

This comparison of seasonal and non-seasonal calving systems illustrates the challenge in reaching confident conclusions from small groups of data and it reminds us of the danger in reaching confident conclusions from testimonials. It demonstrates the importance of using standardized and complete financial documentation to compare different farms and systems. It also begs for a careful ongoing examination to understand what is happening and what factors can result in profitability shifts.

XVI. Comparing Seasonal Calving/Milking (Stop Milking at Least One Day Each Year) with Non-Seasonal Herds in 2003.

The average grazer in the 2003 data that used the seasonal calving strategy had slightly more desirable financial performance than the average non-seasonal herd when NFIFO/Cow, NFIFO/CWT EQ or total NFIFO was used as the yardstick. The seasonal herds had a large advantage in 2001. **This is a sharp contrast** to the 2002 and 2000 data and with comparisons of multiple years of other calving/milking strategy comparisons.

Unfortunately for research purposes, less than 15 percent of the herds in the four years of summaries practice seasonal calving/milking. The average seasonal herd in the 2003 data had 81% more cows which produced about 69% as much milk per Cow as the cows in the non-seasonal herds.

The seasonal herds spent a little bit less per CWT EQ for most of the basic cost categories compared to the non-seasonal herds. However, the seasonal herds spent \$0.21/CWT EQ more for purchased feed, \$0.19 more for rent and leases, and \$0.08 more for marketing and hedging. Overall, the seasonal herds spent \$0.27 less per CWT EQ for all basic costs in 2003.

The seasonal herds also had a combined \$0.30 per CWT EQ advantage in the four non-basic cost categories that are added to the basic cost category to create the allocated cost category. More specifically, the average seasonal grazer in 2003 had a \$0.16 per CWT EQ advantage in paid labor and management expense but a disadvantage of \$0.05 per CWT EQ in interest expense and a \$0.19 advantage in depreciation per CWT EQ.

The \$0.30 per CWT EQ advantage in the non-basic costs of the seasonal herds, plus the seasonal herd's total basic cost advantage of \$0.27 per CWT EQ, accounts for the \$0.57 (\$2.58 – 2.11) advantage that the seasonal herds had in NFIFO per CWT EQ.

If paid labor and management compensation were omitted, the NFIFO per CWT EQ would increase to \$3.40 for the seasonal and to \$2.99 for the non-seasonal herds.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 4-1 Comparing Seasonal with non-Seasonal Calving/Milking Herds/Many Performance Measures from Tables 4-2 to 4-9									
	Seasonal					Non-Seasonal			
	2000	2001	2002	2003		2000	2001	2002	2003
Number of Herds	7	18	13	14		85	101	90	88
Number of Cows per Herd	145	85	141	143		85	84	78	79
Average Lbs. Milk per Cow	11,667	12,270	11,044	11,528		17,560	15,695	16,454	16,494
Average Lbs. Milk per Herd	1,691,715	1,044,970	1,560,561	1,645,234		1,496,401	1,325,900	1,283,544	1,296,821
Group Average Mailbox Milk Price	\$13.70	\$17.50	\$13.05	\$14.45		\$13.06	\$16.14	\$13.85	\$14.38
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.33	\$14.94	\$12.15	\$12.50		\$12.33	\$14.94	\$12.15	\$12.50
Average Basic Cost per CWT EQ	\$6.73	\$7.67	\$8.02	\$7.57		\$7.96	\$8.69	\$7.69	\$7.84
Allocated Cost per CWT EQ	\$11.46	\$10.28	\$10.83	\$9.92		\$10.58	\$11.90	\$10.38	\$10.49
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$4.73	\$2.61	\$2.81	\$2.35		\$2.62	\$3.21	\$2.69	\$2.65
NFIFO per Cow (without deducting any labor compensation)	\$404	\$1,101	\$381	\$609		\$602	\$825	\$683	\$687
NFIFO per CWT EQ (without deducting any labor compensation)	\$2.20	\$5.46	\$2.36	\$3.40		\$2.64	\$4.21	\$2.89	\$2.99
NFIFO per Farm	\$23,202	\$73,322	\$30,061	\$65,921		\$33,913	\$50,413	\$32,686	\$36,264
NFIFO per Cow	\$160	\$861	\$213	\$462		\$398	\$597	\$419	\$461
NFIFO per CWT EQ	\$0.87	\$4.66	\$1.32	\$2.58		\$1.75	\$3.04	\$1.77	\$2.01

*See Chapters IX and X for more information about CWT EQ and cost categories.



Table 4-2 p. 1

**The Average AgFA© Farm Earnings Report for the 13 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

Income	2003	2003	2003
	<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
Cash Income - Basis Adjustments			
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	240,376.79	1,684.32	9.39
Raised Non-Breeding Livestock Sales	14,040.14	98.38	0.55
Crop Sales	1,273.71	8.92	0.05
Distributions Received from Cooperatives	272.93	1.91	0.01
Agricultural Program Payments	17,012.21	119.20	0.66
MILC Program Payments	4,855.86	34.03	0.19
Custom Hire (Machine Work) Income	900.86	6.31	0.04
Other Income, Incl. Tax Credits, Refunds	2,798.50	19.61	0.11
Basis in Breeding Livestock Sold	(533.71)	(3.74)	(0.02)
Sale of Raised Breeding Livestock	22,088.36	154.77	0.86
Total Cash Income - Basis Adjustments	303,085.64	2,123.72	11.84
Non-Cash Income			
Change in Raised Crop Inventories	2,067.14	14.48	0.08
Change in Remaining Current Assets	(212.50)	(1.49)	(0.01)
Change in Raised Breeding Livestock	14,912.29	104.49	0.58
Total Non-Cash Income	16,766.93	117.49	0.66
Total Income	319,852.57	2,241.21	12.50



Table 4-2 p. 2

**The Average AgFA© Farm Earnings Report for the 13 Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

Expenses	2003	2003	2003
	<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
Cash Expense			
Cost of Items for Resale	155.64	1.09	0.01
Breeding Fees	1,635.86	11.46	0.06
Car and Truck Expenses	706.00	4.95	0.03
Chemicals	839.14	5.88	0.03
Conservation Expenses	608.93	4.27	0.02
Custom Heifer Raising Expenses	0.00	0.00	0.00
Custom Hire (Machine Work)	7,972.93	55.87	0.31
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	0.00	0.00	0.00
Feed Purchase	77,673.21	544.26	3.04
Fertilizer and Lime	9,013.93	63.16	0.35
Freight and Trucking	729.93	5.11	0.03
Gasoline, Fuel, and Oil	5,245.93	36.76	0.21
Farm Insurance	4,926.93	34.52	0.19
Mortgage Interest	12,886.57	90.30	0.50
Other Interest	1,786.43	12.52	0.07
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	21,049.64	147.49	0.82
Pension and Profit-Sharing Plans - Non-Dependents	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Rent/Lease Equipment	1,428.21	10.01	0.06
Rent/Lease Other	10,816.07	75.79	0.42
Repairs and Maintenance	17,976.00	125.96	0.70
Building and Fence Repairs	380.50	2.67	0.01
Seeds and Plants Purchased	3,711.36	26.01	0.15
Storage and Warehousing	0.00	0.00	0.00
Supplies Purchased	7,512.43	52.64	0.29
Taxes - Other	4,323.86	30.30	0.17
Taxes - Payroll	0.00	0.00	0.00
Utilities	7,175.43	50.28	0.28
Veterinary Fees and Medicine	6,634.21	46.49	0.26
Other Farm Expenses	5,922.57	41.50	0.23
Marketing & Hedging	11,231.29	78.70	0.44
Other Crop Expenses	10.00	0.07	0.00
Other Livestock Expenses	10,591.57	74.22	0.41
Total Cash Expense	232,944.57	1,632.24	9.10
Non-Cash Expenses			
- Change in Prepaid Expenses	(3,101.14)	(21.73)	(0.12)
Change in Accounts Payable	(754.00)	(5.28)	(0.03)
Machinery, Equipment and Building Depreciation	24,607.00	172.42	0.96
Livestock Depreciation	234.64	1.64	0.01
Total Non-Cash Expenses	20,986.50	147.05	0.82
Total Expenses	253,931.07	1,779.30	9.92
Net Farm Income From Operations (NFIFO)	65,921.50	461.91	2.58
Gain (Loss) on Sale of All Farm Capital Assets	1,519.64	10.65	0.06
Net Farm Income (NFI)	67,441.14	472.56	2.64



Table 4-3 p. 1

**The Average AgFA® Cost of Production Report for the 13 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

Income		2003	2003	2003
		<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
	Total Income	319,852.57	19.44	12.50
Expenses				
Basic Cost				
	Cost of Items for Resale	155.64	0.01	0.01
	Breeding Fees	1,635.86	0.10	0.06
	Car and Truck Expenses	706.00	0.04	0.03
	Chemicals	839.14	0.05	0.03
	Conservation Expenses	608.93	0.04	0.02
	Custom Heifer Raising Expenses	0.00	0.00	0.00
	Custom Hire (Machine Work)	7,972.93	0.48	0.31
	Feed Purchase	77,673.21	4.72	3.04
	Fertilizer and Lime	9,013.93	0.55	0.35
	Freight and Trucking	729.93	0.04	0.03
	Gasoline, Fuel, and Oil	5,245.93	0.32	0.21
	Farm Insurance	4,926.93	0.30	0.19
	Rent/Lease Equipment	1,428.21	0.09	0.06
	Rent/Lease Other	10,816.07	0.66	0.42
	Repairs and Maintenance	17,976.00	1.09	0.70
	Building and Fence Repairs	380.50	0.02	0.01
	Seeds and Plants Purchased	3,711.36	0.23	0.15
	Storage and Warehousing	0.00	0.00	0.00
	Supplies Purchased	7,512.43	0.46	0.29
	Taxes - Other	4,323.86	0.26	0.17
	Taxes - Payroll	0.00	0.00	0.00
	Utilities	7,175.43	0.44	0.28
	Veterinary Fees and Medicine	6,634.21	0.40	0.26
	Other Farm Expenses	5,922.57	0.36	0.23
	Marketing & Hedging	11,231.29	0.68	0.44
	Other Crop Expenses	10.00	0.00	0.00
	Other Livestock Expenses	10,591.57	0.64	0.41
	- Change in Prepaid Expenses	(3,101.14)	(0.19)	(0.12)
	Change in Accounts Payable	(754.00)	(0.05)	(0.03)
	Depreciation on Purchased Breeding Livestock	234.64	0.01	0.01
	Total Basic Cost	193,601.43	11.77	7.57



Table 4-3 p. 2

**The Average AgFA® Cost of Production Report for the 13 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

	2003 per Farm	2003 per Cow	2003 per CWT EQ
Interest Cost			
Mortgage Interest	12,886.57	0.78	0.50
Other Interest	1,786.43	0.11	0.07
Total Interest Cost	14,673.00	0.89	0.57
Labor Cost			
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	0.00	0.00	0.00
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	21,049.64	1.28	0.82
Pension and Profit-Sharing Plans - Non-Dependents	0.00	0.00	0.00
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Value of Unpaid Labor & Management	41,668.14	2.53	1.63
Total Labor Cost	62,717.79	3.81	2.45
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	24,607.00	1.50	0.96
Interest on Equity Capital	30,131.80	1.83	1.18
Total Depreciation & Equity Cost	54,738.80	3.33	2.14
Total Expenses	325,731.02	19.80	12.73
Total Income - Total Expenses	(5,878.44)	(0.36)	(0.23)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	253,931.07	15.43	9.92
Net Farm Income From Operations (NFIFO)	65,921.50	4.01	2.58
Gain (Loss) on Sale of All Farm Capital Assets	1,519.64	0.09	0.06
Net Farm Income (NFI)	67,441.14	4.10	2.64



Table 4-4 p. 1

The Average AgFA© Financial Measures Report for the 13 Seasonal Great Lakes Graziers

These Financial Measures Were Calculated Using the Cost Basis of Assets and Cost (Tax) Depreciation

The financial calculations using the Market Basis of Assets and Economic Depreciation are on the following page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$65,921.50	\$461.91	\$2.58
Net Farm Income	\$67,441.14	\$472.56	\$2.64
Rate of Return on Assets (ROROA)	29.95%	29.95%	29.95%
Cost (Tax) Depreciation Claimed	\$24,841.64	\$174.07	\$0.97
Rate of Return on Equity	N/A	N/A	N/A
Net Profit Margin	12.65 %	12.65%	12.65 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	2.355	2.355	2.355
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.605	0.605	0.605
	Wages Paid Ratio 0.066	0.066	0.066
	Interest Paid Ratio 0.046	0.046	0.046
	Depreciation Ratio 0.077	0.077	0.077
Net Farm Income from Operations Ratio	0.206	0.206	0.206
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$53,882.71	\$377.56	\$2.11
Coverage Margin	\$1,177.23	\$8.25	\$0.05
Term Debt Coverage Ratio	1.54	1.54	1.54
Liquidity			
Net Cash Income	\$70,674.79	\$495.22	\$2.76
Working Capital	\$12,700.46	\$88.99	\$0.50
Current Ratio	1.23	1.23	1.23
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$365,780.57	\$2,563.03	\$14.29
Beginning Total Farm Liabilities	\$287,607.93	\$2,015.27	\$11.24
Beginning Farm Net Worth	\$78,172.64		\$3.06
Farm Debt to Asset Ratio - Beginning of Year	0.796	0.796	0.796
Ending Total Farm Assets	\$387,009.57	\$2,711.78	\$15.12
Ending Total Farm Liabilities	\$291,338.43	\$2,041.41	\$11.39
Ending Farm Net Worth	\$95,671.14	\$670.37	\$3.74
Year Ending Farm Debt to Asset Ratio	0.753	0.753	0.753
Cost Basis Change in Farm Net Worth	\$17,498.50	\$122.61	\$0.68



Table 4-4 p. 2

The Average AgFA© Financial Measures Report for the 13 Seasonal Great Lakes Graziers

These Financial Measures Were Calculated Using the Market Value of Assets and Economic Depreciation

The financial calculations using the Cost Basis of Assets and Cost (Tax) Depreciation are on the previous page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$77,111.83	\$540.32	\$3.01
Net Farm Income	\$78,631.47	\$550.97	\$3.07
Rate of Return on Assets (ROROA)	5.79 %	5.79 %	5.79 %
Economic Depreciation Claimed	\$13,651.31	\$95.65	\$0.53
Rate of Return on Equity	6.13 %	6.13%	6.13%
Net Profit Margin	16.14 %	16.14%	16.14%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.359	0.359	0.359
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.605	0.605	0.605
	Wages Paid Ratio 0.066	0.066	0.066
	Interest Paid Ratio 0.046	0.046	0.046
	Depreciation Ratio 0.043	0.043	0.043
Net Farm Income from Operations Ratio	0.241	0.241	0.241
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$53,882.71	\$377.56	\$2.11
Coverage Margin	\$1,177.23	\$8.25	\$0.05
Term Debt Coverage Ratio	1.54	1.54	1.54
Liquidity			
Net Cash Income	\$70,674.79	\$495.22	\$2.76
Working Capital	\$12,700.46	\$88.99	\$0.50
Current Ratio	1.23	1.23	1.23
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$870,594.17	\$6,100.26	\$34.02
Beginning Total Farm Liabilities	\$287,607.93	\$2,015.27	\$11.24
Beginning Farm Net Worth	\$582,986.24	\$4,084.99	\$22.78
Farm Debt to Asset Ratio - Beginning of Year	0.330	0.330	0.330
Ending Total Farm Assets	\$913,624.22	\$6,401.77	\$35.70
Ending Total Farm Liabilities	\$291,338.43	\$2,041.41	\$11.39
Ending Farm Net Worth	\$622,285.79	\$4,360.36	\$24.32
Year Ending Farm Debt to Asset Ratio	0.319	0.319	0.319
Total Change in Farm Net Worth	\$39,299.54	\$275.37	\$1.54



Table 4-5

**The Average AgFA© Balance Sheet Report for the 13 Seasonal Great Lakes Graziers in 2003
Showing the Current Market Values and Historic Cost Value of Assets
(Stop Milking Herd at Least One Day Each Year)**

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	15,972	18,019		
Prepaid Expenses & Purchased Inventories	8,203	11,304		
Raised Feed Inventories	16,894	18,961		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	12,871	15,031		
Market Livestock & Etc.	7,316	4,942		
Total Current Assets	61,255	68,259		
Non-Current Assets			<u>Beg.</u>	<u>End</u>
Raised Breeding Livestock	233,131	248,043	<u>Dollars</u>	<u>Dollars</u>
Purchased Breeding Livestock	0	0	235	0
Machinery & Equipment	119,674	125,025	9,597	11,259
Buildings	39,729	38,915	24,180	22,066
Land & House	408,079	423,826	35,519	35,458
Other Non-Current Assets	8,728	9,557	1,865	1,925
Total Non-Current Assets	809,339	845,366	71,395	70,708
Total Farm Assets	870,594	913,624		
Current Liabilities				
Accounts Payable	6,877	6,123		
Current Portion of Non-Current Liabilities	29,707	26,810		
Other Current Liabilities	15,588	22,625		
Total Current Liabilities	52,172	55,558		
Non-Current Liabilities				
Intermediate Liabilities	24,217	28,145		
Long-Term Liabilities	211,220	207,635		
Contingent Liabilities	0	0		
Total Non-Current Liabilities	235,436	235,780		
Total Farm Liabilities	287,608	291,338		
Non-Farm Assets	16,616	21,402		
Non-Farm Liabilities	1,434	4,577		

Statement of Equities (Net Worth)

	<u>Beginnin</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	0	0	0
Retained Earnings ¹	78,173	95,671	17,499
Valuation Adjustment	504,814	526,615	21,801
Total Farm Equities	582,986	622,286	39,300
Non-Farm Equities	15,182	16,825	1,643
Total Equities	598,168	639,110	40,942

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



Table 4-6 p. 1

The Average AgFA© Farm Earnings Report for the 88 Non-Seasonal Great Lakes Graziers

Income	2003 <u>per Farm</u>	2003 <u>per Cow</u>	2003 <u>per CWT EQ</u>
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	2.91	0.04	0.00
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	182,573.55	2,322.08	10.12
Raised Non-Breeding Livestock Sales	5,127.81	65.22	0.28
Crop Sales	1,888.17	24.01	0.10
Distributions Received from Cooperatives	666.84	8.48	0.04
Agricultural Program Payments	14,131.95	179.74	0.78
MILC Program Payments	3,659.23	46.54	0.20
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	879.49	11.19	0.05
Other Income, Incl. Tax Credits, Refunds	2,952.01	37.55	0.16
Sale of Purchased Breeding Livestock	233.95	2.98	0.01
Basis in Breeding Livestock Sold	(732.09)	(9.31)	(0.04)
Sale of Raised Breeding Livestock	9,452.61	120.22	0.52
Total Cash Income - Basis Adjustments	220,836.45	2,808.73	12.24
Non-Cash Income			
Change in Raised Crop Inventories	3,470.15	44.14	0.19
Change in Remaining Current Assets	154.55	1.97	0.01
Change in Raised Breeding Livestock	1,082.89	13.77	0.06
Total Non-Cash Income	4,707.59	59.87	0.26
Total Income	225,544.04	2,868.60	12.50



Table 4-6 p. 2

The Average AgFA© Farm Earnings Report for the 88 Non-Seasonal Great Lakes Graziers

Expenses	2003 per Farm	2003 per Cow	2003 per CWT EQ
Cash Expense			
Cost of Items for Resale	145.60	1.85	0.01
Breeding Fees	2,731.23	34.74	0.15
Car and Truck Expenses	626.53	7.97	0.03
Chemicals	1,066.09	13.56	0.06
Conservation Expenses	0.00	0.00	0.00
Custom Heifer Raising Expenses	34.09	0.43	0.00
Custom Hire (Machine Work)	5,690.52	72.38	0.32
Employee Benefits - Dependents	115.22	1.47	0.01
Employee Benefits - Non-Dependents	565.58	7.19	0.03
Feed Purchase	51,102.07	649.95	2.83
Fertilizer and Lime	5,282.48	67.19	0.29
Freight and Trucking	2,267.46	28.84	0.13
Gasoline, Fuel, and Oil	5,636.84	71.69	0.31
Farm Insurance	3,682.38	46.83	0.20
Mortgage Interest	7,049.41	89.66	0.39
Other Interest	2,343.54	29.81	0.13
Labor Hired - Dependents	699.09	8.89	0.04
Labor Hired - Non-Dependents	16,270.35	206.94	0.90
Pension and Profit-Sharing Plans - Dependents	68.18	0.87	0.00
Rent/Lease Equipment	1,170.05	14.88	0.06
Rent/Lease Other	4,165.55	52.98	0.23
Repairs and Maintenance	11,978.89	152.35	0.66
Building and Fence Repairs	1,476.82	18.78	0.08
Machinery Repairs	943.74	12.00	0.05
Seeds and Plants Purchased	3,161.07	40.20	0.18
Storage and Warehousing	6.07	0.08	0.00
Supplies Purchased	5,553.18	70.63	0.31
Taxes - Other	3,974.18	50.55	0.22
Taxes - Payroll	46.95	0.60	0.00
Utilities	5,461.55	69.46	0.30
Veterinary Fees and Medicine	5,074.52	64.54	0.28
Other Farm Expenses	5,087.00	64.70	0.28
Marketing & Hedging	6,508.34	82.78	0.36
Other Crop Expenses	745.05	9.48	0.04
Other Livestock Expenses	6,406.75	81.48	0.36
Selling Expense of Capital Items	9.49	0.12	0.00
Total Cash Expense	167,145.87	2,125.86	9.26
Non-Cash Expenses			
- Change in Prepaid Expenses	(1,353.52)	(17.21)	(0.08)
Change in Accounts Payable	1,055.05	13.42	0.06
Machinery, Equipment and Building Depreciation	20,709.58	263.40	1.15
Livestock Depreciation	1,722.70	21.91	0.10
Total Non-Cash Expenses	22,133.81	281.51	1.23
Total Expenses	189,279.67	2,407.37	10.49
Net Farm Income From Operations (NFIFO)	36,264.37	461.23	2.01
Gain (Loss) on Sale of All Farm Capital Assets	687.16	8.74	0.04
Net Farm Income (NFI)	36,951.52	469.97	2.05



Table 4-7 p. 1

**The Average AgFA© Cost of Production Report for the 88 Non-Seasonal Great Lakes Graziers
Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details**

Income		2003	2003	2003
		<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
	Total Income	225,544.04	17.39	12.50
Expenses				
Basic Cost				
	Cost of Items for Resale	145.60	0.01	0.01
	Breeding Fees	2,731.23	0.21	0.15
	Car and Truck Expenses	626.53	0.05	0.03
	Chemicals	1,066.09	0.08	0.06
	Conservation Expenses	0.00	0.00	0.00
	Custom Heifer Raising Expenses	34.09	0.00	0.00
	Custom Hire (Machine Work)	5,690.52	0.44	0.32
	Feed Purchase	51,102.07	3.94	2.83
	Fertilizer and Lime	5,282.48	0.41	0.29
	Freight and Trucking	2,267.46	0.17	0.13
	Gasoline, Fuel, and Oil	5,636.84	0.43	0.31
	Farm Insurance	3,682.38	0.28	0.20
	Rent/Lease Equipment	1,170.05	0.09	0.06
	Rent/Lease Other	4,165.55	0.32	0.23
	Repairs and Maintenance	11,978.89	0.92	0.66
	Building and Fence Repairs	1,476.82	0.11	0.08
	Machinery Repairs	943.74	0.07	0.05
	Seeds and Plants Purchased	3,161.07	0.24	0.18
	Storage and Warehousing	6.07	0.00	0.00
	Supplies Purchased	5,553.18	0.43	0.31
	Taxes - Other	3,974.18	0.31	0.22
	Taxes - Payroll	46.95	0.00	0.00
	Utilities	5,461.55	0.42	0.30
	Veterinary Fees and Medicine	5,074.52	0.39	0.28
	Other Farm Expenses	5,087.00	0.39	0.28
	Marketing & Hedging	6,508.34	0.50	0.36
	Other Crop Expenses	745.05	0.06	0.04
	Other Livestock Expenses	6,406.75	0.49	0.36
	- Change in Prepaid Expenses	(1,353.52)	(0.10)	(0.08)
	Change in Accounts Payable	1,055.05	0.08	0.06
	Selling Expense of Capital Items	9.49	0.00	0.00
	Depreciation on Purchased Breeding Livestock	1,722.70	0.13	0.10
	Total Basic Cost	141,458.73	10.91	7.84



Table 4-7 p. 2

**The Average AgFA© Cost of Production Report for the 88 Non-Seasonal Great Lakes Graziers
Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details**

	2003	2003	2003
	<u>per Farm</u>	<u>per Cow</u>	<u>per CWT EQ</u>
Interest Cost			
Mortgage Interest	7,049.41	0.54	0.39
Other Interest	2,343.54	0.18	0.13
Total Interest Cost	9,392.95	0.72	0.52
Labor Cost			
Employee Benefits - Dependents	115.22	0.01	0.01
Employee Benefits - Non-Dependents	565.58	0.04	0.03
Labor Hired - Dependents	699.09	0.05	0.04
Labor Hired - Non-Dependents	16,270.35	1.25	0.90
Pension and Profit-Sharing Plans - Dependents	68.18	0.01	0.00
Value of Unpaid Labor & Management	35,599.95	2.75	1.97
Total Labor Cost	53,318.37	4.11	2.95
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	20,709.58	1.60	1.15
Interest on Equity Capital	25,808.92	1.99	1.43
Total Depreciation & Equity Cost	46,518.49	3.59	2.58
Total Expenses	250,688.54	19.33	13.89
Total Income - Total Expenses	(25,144.50)	(1.94)	(1.39)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	189,279.67	14.60	10.49
Net Farm Income From Operations (NFIFO)	36,264.37	2.80	2.01
Gain (Loss) on Sale of All Farm Capital Assets	687.16	0.05	0.04
Net Farm Income (NFI)	36,951.52	2.85	2.05



Table 4-8 p. 1
The Average AgFA© Financial Measures Report for the 88 Non-Seasonal Great Lakes Graziers

These Financial Measures Were Calculated Using the Cost Basis of Assets and Cost (Tax) Depreciation
 The financial calculations using the Market Basis of Assets and Economic Depreciation are on the following page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$36,264.37	\$461.23	\$2.01
Net Farm Income	\$36,951.51	\$469.97	\$2.05
Rate of Return on Assets (ROROA)	5.50%	5.50%	5.50%
Cost (Tax) Depreciation Claimed	\$22,432.28	\$285.31	\$1.24
Rate of Return on Equity	6.13 %	6.13%	6.13%
Net Profit Margin	4.78 %	4.78 %	4.78%
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.114	1.114	1.114
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.627	0.627	0.627
	Wages Paid Ratio 0.079	0.079	0.079
	Interest Paid Ratio 0.042	0.042	0.042
	Depreciation Ratio 0.092	0.092	0.092
Net Farm Income from Operations Ratio	0.161	0.161	0.161
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$43,961.07	\$559.12	\$2.44
Coverage Margin	\$11,128.41	\$141.54	\$0.62
Term Debt Coverage Ratio	1.92	1.92	1.92
Liquidity			
Net Cash Income	\$54,422.67	\$692.18	\$3.02
Working Capital	\$22,861.04	\$290.76	\$1.27
Current Ratio	1.66	1.66	1.66
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$331,046.19	\$4,210.44	\$18.35
Beginning Total Farm Liabilities	\$171,590.41	\$2,182.39	\$9.51
Beginning Farm Net Worth	\$159,455.78	\$2,028.05	\$8.84
Farm Debt to Asset Ratio - Beginning of Year	0.568	0.568	0.568
Ending Total Farm Assets	\$348,632.02	\$4,434.11	\$19.32
Ending Total Farm Liabilities	\$188,056.65	\$2,391.82	\$10.42
Ending Farm Net Worth	\$160,575.37	\$2,042.29	\$8.90
Year Ending Farm Debt to Asset Ratio	0.539	0.539	0.539
Cost Basis Change in Farm Net Worth	\$1,119.58	\$14.24	\$0.06



Table 4-8 p. 2
The Average AgFA© Financial Measures Report for the 88 Non-Seasonal Great Lakes Graziers

These Financial Measures Were Calculated Using the Market Value of Assets and Economic Depreciation
 The financial calculations using the Cost Basis of Assets and Cost (Tax) Depreciation are on the previous page.

Profitability	2003 per Farm	2003 per Cow	2003 per CWT EQ
Net Farm Income From Operations	\$52,491.99	\$667.62	\$2.91
Net Farm Income	\$53,179.14	\$676.36	\$2.95
Rate of Return on Assets (ROROA)	3.88 %	3.88 %	3.88 %
Economic Depreciation Claimed	\$6,236.48	\$79.32	\$0.35
Rate of Return on Equity	3.41 %	3.41%	3.41 %
Net Profit Margin	11.96 %	11.96%	11.96 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.324	0.324	0.324
Note: Some methods of calculating Basic Cost Ratio	0.625	0.625	0.625
ratios combine the Basic Cost and Wages Paid Ratio	0.079	0.079	0.079
Wages Paid Ratios into a single Interest Paid Ratio	0.042	0.042	0.042
ratio (Operating Cost Ratio). Depreciation Ratio	0.022	0.022	0.022
Net Farm Income from Operations Ratio	0.233	0.233	0.233
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$43,961.07	\$541.69	\$2.36
Coverage Margin	\$11,128.41	\$141.54	\$0.62
Term Debt Coverage Ratio	1.92	1.87	1.87
Liquidity			
Net Cash Income	\$54,422.67	\$692.18	\$3.02
Working Capital	\$22,861.04	\$290.76	\$1.27
Current Ratio	1.66	1.66	1.66
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$669,762.34	\$8,518.44	\$37.12
Beginning Total Farm Liabilities	\$171,590.41	\$2,182.39	\$9.51
Beginning Farm Net Worth	\$498,171.93	\$6,336.05	\$27.61
Farm Debt to Asset Ratio - Beginning of Year	0.256	0.256	0.256
Ending Total Farm Assets	\$722,182.30	\$9,185.15	\$40.02
Ending Total Farm Liabilities	\$188,056.65	\$2,391.82	\$10.42
Ending Farm Net Worth	\$534,125.65	\$6,793.33	\$29.60
Year Ending Farm Debt to Asset Ratio	0.260	0.260	0.260
Total Change in Farm Net Worth	\$35,953.71	\$457.28	\$1.99



Table 4-9

The Average AgFA© Balance Sheet Report for the 88 Non-Seasonal Great Lakes Graziers in 2003

Showing the Current Market Values and Historic Cost Values of Assets

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	5,604	8,411		
Prepaid Expenses & Purchased Inventories	5,944	7,298		
Raised Feed Inventories	28,917	32,387		
Basis in Resale Livestock Purchased	0	19		
Accounts Receivable	6,942	7,160		
Market Livestock & Etc.	2,122	2,058		
Total Current Assets	49,529	57,333		
Non-Current Assets			<u>Beg.</u>	<u>End</u>
Raised Breeding Livestock	136,901	137,984	<u>Dollars</u>	<u>Dollars</u>
Purchased Breeding Livestock	769	799	3,209	2,893
Machinery & Equipment	105,521	111,696	27,207	29,067
Buildings	46,085	49,313	22,598	25,785
Land & House	228,504	250,455	66,120	70,852
Other Non-Current Assets	102,454	114,603	25,482	24,718
Total Non-Current Assets	620,234	664,849	144,617	153,315
Total Farm Assets	669,762	722,182		
Current Liabilities				
Accounts Payable	6,118	7,141		
Current Portion of Non-Current Liabilities	18,381	17,021		
Other Current Liabilities	7,621	10,310		
Total Current Liabilities	32,119	34,472		
Non-Current Liabilities				
Intermediate Liabilities	22,007	22,328		
Long-Term Liabilities	117,464	131,257		
Contingent Liabilities	136,271	147,112		
Total Non-Current Liabilities	275,742	300,696		
Total Farm Liabilities	307,861	335,168		
Non-Farm Assets	40,327	44,104		
Non-Farm Liabilities	1,948	1,796		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	870	2,222	1,352
Retained Earnings ¹	158,586	158,353	-233
Valuation Adjustment	202,445	226,439	23,993
Total Farm Equities	361,901	387,014	25,113
Non-Farm Equities	38,379	42,307	3,928
Total Equities	400,280	429,321	29,041

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

XVII. Comparing Grazing Herds to Confinement Herds

Most of the available data indicates that the NFIFO per Cow and NFIFO per CWT EQ decreases as herd size increases. That is only one of the many reasons to be very careful when comparing the average financial performance of graziers to the average financial performance of confinement herds. While progress has been made in standardizing data handling procedures and analysis for graziers in some states, this level of uniformity does not yet exist with all confinement data. Consequently, the comments made about the relative financial performance of graziers versus confinement herds focus on data from New York and Wisconsin. These states have collected their confinement data under conditions similar to those used to collect grazer data.

A higher percent of total labor used on the larger confinement farms is hired. To better understand the effects of this information on financial performance, it is useful to examine the impact of labor compensation on NFIFO/Cow and NFIFO/CWT EQ.

As shown in Table 5-1 below, the Wisconsin graziers NFIFO/CWT EQ advantage in 2003 would disappear from \$0.74 (\$2.38-\$1.64) to -\$0.34(\$2.78-\$3.12) if all (paid and unpaid) labor compensation were omitted. In addition, the NFIFO/Cow advantage would disappear, narrowing from \$36 (\$504-\$468) to -\$304 (\$588-\$892) in 2003 if all labor compensation were omitted.

The New York graziers NFIFO/CWT EQ advantage in 2003 would narrow from \$1.82 (\$2.21-\$0.39) to \$0.98(\$3.42-\$2.44) if all labor compensation were omitted. The NFIFO/Cow advantage narrows from \$410 (\$518-\$108) to \$61 (\$742-\$681) when labor compensation is omitted.

The graziers in both states in all four years had an advantage over their confinement counterparts in NFIFO/CWT EQ and in the allocated and non-basic cost categories. In all years, the Wisconsin graziers also had a NFIFO/CWT EQ advantage in the basic cost category. The New York graziers had an advantage in the basic cost category in two years and a very slight disadvantage in the other two years. Together, this suggests that the graziers in this study spread their NFIFO/CWT EQ advantage among many factors.

2003 is a bit different from the other three years in that Wisconsin graziers had their smallest advantage of the four years over their confinement counterparts. The opposite was true for New York.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 5-1 Comparing the Financial Performance of Graziers to Confinement Dairy Herds in Two Participating States in 2003				
	Wisconsin		New York	
	Grazier	Confinement	Grazier	Confinement
Number of Herds	43	652	28	173
Number of Cows per Herd	61	123	108	348
Average Lbs. Milk per Cow	15,796	21,346	15,840	22,610
Average Lbs. Milk per Herd	961,726	2,625,558	1,709,627	7,868,387
Group Average Mailbox Milk Price	\$14.01	\$12.92	\$14.57	\$13.07
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.50	\$12.50	\$12.50	\$12.50
Average Basic Cost per CWT EQ	\$7.50	\$7.70**	\$7.70**	\$8.60
Allocated Cost per CWT EQ	\$10.12	\$10.86	\$10.29	\$12.11
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.62	\$3.16	\$2.59	\$3.51
NFIFO per Cow (without deducting any labor compensation)	\$588	\$892	\$800	\$672
NFIFO per CWT EQ (without deducting any labor compensation)	\$2.78	\$3.12	\$3.42	\$2.44
NFIFO per Farm	\$30,655	\$57,481	\$55,934	\$37,560
NFIFO per Cow	\$504	\$468	\$518	\$108
NFIFO per CWT EQ	\$2.38	\$1.64	\$2.21	\$0.39

*See Chapters IX and X for more information about CWT EQ and cost categories.

** By coincidence, the basic cost of both groups are equal.

As shown in Table 5-2 below, the Wisconsin graziers NFIFO/CWT EQ advantage in 2002 would narrow from \$1.68 (\$2.53 – \$0.85) to \$0.78 (\$3.14 – \$2.36) if all (paid and unpaid) labor compensation were omitted. In addition, the NFIFO/Cow advantage would nearly disappear, narrowing from \$294 (\$524 – \$230) to \$10 (\$651 – \$641) in 2002 if all labor compensation were omitted.

The New York graziers NFIFO/CWT EQ advantage in 2002 would narrow from \$1.15 (\$1.56-\$0.41) to \$0.52 (\$2.86-\$2.34) if all labor compensation were omitted. The NFIFO/Cow advantage narrows from \$255 (\$374-\$119) to \$114 (\$786-\$672) when labor compensation is omitted.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 5-2 Comparing The Financial Performance Of Graziers To Confinement Dairy Herds In Two Participating States In 2002	Wisconsin		New York	
	Grazier	Confinement	Grazier	Confinement
Number of Herds	31	581	34	194
Number of Cows per Herd	61	117	102	323
Average Pounds of Milk per Cow	15,644	20,858	16,353	22,591
Average Pounds of Milk per Herd	954,085	2,440,386	1,675,724	7,305,774
Group Average Mailbox Milk Price	\$12.55	\$12.66	\$14.27	\$12.93
U.S. All Milk Price (used in calculating CWT EQ)*	\$12.15	\$12.15	\$12.15	\$12.15
Average Basic Cost per Cwt EQ	\$7.23	\$7.91	\$7.84	\$8.22
Allocated Cost per Cwt EQ	\$9.62	\$11.30	\$9.68	\$11.74
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.39	\$3.39	\$1.84	\$3.52
NFIFO Per Cow (Without Deducting Labor Compensation)	\$651	\$641	\$786	\$672
NFIFO Per CWT EQ (Without Deducting Labor Compensation)	\$3.14	\$2.36	\$2.86	\$2.34
NFIFO per Farm	\$31,928	\$26,963	\$38,316	\$38,284
NFIFO per Cow	\$524	\$230	\$374	\$119
NFIFO per CWT EQ	\$2.53	\$0.85	\$1.56	\$0.41

*See Chapters IX and X for more information about CWT EQ and cost categories.

As shown in Table 5-3 on the next page, the Wisconsin graziers NFIFO/CWT EQ advantage in 2001 would narrow from \$2.31 (\$4.48 – \$2.17) to \$1.27 (\$5.02 – \$3.75) if all labor compensation were omitted. In addition, the NFIFO/Cow advantage would nearly disappear, narrowing from \$322 (\$842 – \$520) to \$36 (\$933 – \$897) in 2001 if all labor compensation were omitted.

If all labor compensation were omitted, the New York graziers would lose their advantage in NFIFO/CWT EQ (from a plus \$0.63 to a minus \$0.11) and in NFIFO/Cow (from a positive \$41 to a negative \$353) in 2001. In addition, when labor costs were omitted, the New York confinement herds would have a higher NFIFO/Cow than the Wisconsin confinement and grazing herds in 2001.

Because of rounding, some small mathematical differences might be found in the summary tables on the next page.

Table 5-3 Comparing The Financial Performance Of Graziers To Confinement Dairy Herds In Two Participating States In 2001	Wisconsin		New York	
	Grazier	Confinement	Grazier	Confinement
Number of Herds	27	627	53	192
Number of Cows per Herd	62	106	94	340
Average Pounds of Milk per Cow	15,644	20,454	16,150	22,191
Average Pounds of Milk per Herd	974,346	2,192,928	1,513,178	6,983,700
Group Average Mailbox Milk Price	\$15.41	\$14.96	\$15.81	\$14.68
U.S. All Milk Price (used in calculating CWT EQ)*	\$14.94	\$14.94	\$14.94	\$14.94
Average Basic Cost per Cwt EQ	7.68	9.03	9.06	9.01
Allocated Cost per Cwt EQ	10.46	12.77	12.26	12.89
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	2.78	3.74	3.20	3.88
NFIFO per Cow (Without Deducting Labor Compensation)	933	897	810	1163
NFIFO per CWT EQ (Without Deducting Labor Compensation)	5.02	3.75	3.96	4.07
NFIFO per Farm	52,446	54,579	51,428	172,785
NFIFO per Cow	842	520	549	508
NFIFO per CWT EQ	4.48	2.17	2.68	2.05

*See Chapters IX and X for more information about CWT EQ and cost categories.

As shown in Table 5-4, the Wisconsin graziers NFIFO/CWT EQ advantage in 2000 would narrow from \$2.24 (\$3.44 – \$1.20) to \$0.90 (\$3.50 – \$2.60) if all labor compensation were omitted. In addition, the NFIFO/Cow advantage would narrow from \$321 (\$617 – \$296) to \$49 (\$689 – \$640) in 2000 if all labor compensation were omitted.

If all labor compensation were omitted, the New York graziers would lose their advantage in NFIFO/Cow from \$134 (\$315 – \$181) to a negative \$129 (\$534 – \$663) in 2000 and their NFIFO/CWT EQ would narrow from \$0.73 (\$1.38 – \$0.65) to \$0.53 (\$2.34 – \$1.81). In addition, when labor costs were omitted, the New York confinement herds would have a higher NFIFO/Cow than the Wisconsin confinement herds in 2000.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 5-4 Comparing The Financial Performance of Graziers to Confinement Dairy Herds in Two Participating States in 2000	Wisconsin		New York	
	Grazier	Confinement	Grazier	Confinement
Number of Herds	16	605	65	239
Number of Cows per Herd	65	109	93	294
Average Pounds of Milk per Cow	16,404	20,202	17,107	22,167
Average Pounds of Milk per Herd	1,066,764	2,192,928	1,585,980	6,517,830
Group Average Mailbox Milk Price	\$12.38	\$12.21	\$13.30	\$12.61
U.S. All Milk Price (used in calculating CWT EQ)*	\$12.33	\$12.33	\$12.33	\$12.33
Average Basic Cost per Cwt EQ	\$ 6.60	\$7.75	\$8.12	\$8.06
Allocated Cost per Cwt EQ	\$9.19	\$11.13	\$10.95	\$11.68
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.59	\$3.38	\$2.83	\$3.62
NFIFO per Cow (Without Deducting Labor Compensation)	\$689	\$640	\$534	\$663
NFIFO per CWT EQ (Without Deducting Labor Compensation)	\$3.50	\$2.60	\$2.34	\$1.81
NFIFO per Farm	\$40,120	\$32,199	\$29,227	\$50,897
NFIFO per Cow	\$617	\$296	\$315	\$181
NFIFO per CWT EQ	\$3.44	\$1.20	\$1.38	\$0.65

*See Chapters IX and X for more information about CWT EQ and cost categories.

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.

In summary, graziers' disadvantage in income and production per farm and per Cow was more than offset by their control of operating expense, investment and debt. The average grazer, in both states, were more profitable than their confinement counterparts in all years in spite of lower production per Cow.

XVIII. Preview of Financial Performance of Graziers by Breed of Cattle

Dairy herds in the GLGN database represent a number of different breeds of dairy cows as well as crossbred cattle. **Many graziers are keenly interested in breeding the ideal grazing dairy cow.** Therefore, data in this project have been sorted by breed in an attempt to measure the impact of breed on profitability.

The participating herds are categorized as being one of the seven major dairy breeds (Ayrshire, Brown Swiss, Guernsey, Jersey, Holstein (black and white), Holstein (red and white), and Milking Shorthorn) if the herd is at least 85% of one of the above breeds. No red and white Holstein herds are in the data. *The term purebred as used here doesn't require registration. It is used to designate an animal that most experienced observers would recognize as a member of a specific breed and is not known to have crossbreeding in recent ancestry.*

Since not all herds are homogeneous, additional categories and their definitions are necessary.

- 1) Other implies a herd that is at least 85% of a "pure breed" other than the seven major dairy breeds listed as a choice above. Examples are Dutch Belted and Normande.
- 2) Crossbred implies a herd consisting mainly of cows that are the genetic result of a deliberately planned crossbreeding program.
- 3) Mixed implies a combination of several "pure" breeds or a combination of one or more purebreds plus crossbreeds such that no single homogeneous group represents the "predominant breed in the herd." The definition of a herd of mixed breeds is so broad that no two "mixed" herds are alike. The mixed breed category is a "catch all" category. If a herd doesn't fit into one of the more precisely defined breed categories, it is included in the mixed breed category.

There are not enough herds from most breeds to make any meaningful comparisons.

In 2003, 61 of the herds were identified as Holstein. Of the 41 that were not identified as Holstein, 28 were mixed, 8 were Jersey, 6 were crossbred, and one was Brown Swiss.

In 2002, 63 of the herds were identified as Holstein. Of the 40 that were not identified as Holstein, 26 were mixed, 8 were Jersey, 3 were crossbred, with one each of Ayrshire, Brown Swiss, and Dutch Belted.

In 2001, 70 of the herds were identified as Holstein. Of the 54 herds that were not categorized as Holstein, 19 were mixed, 10 were Jersey, five were crossbred, three were Ayrshire, and one each of Brown Swiss and Dutch Belted.

Only one other pure breed was found as the predominant breed on 8 or more herds in the study in more than one year. That breed is Jersey and this number of observations is too small to use for confident conclusions. Also since half of the Jersey herds in 2003 and 2002 practiced seasonal calving, the Jersey herd performance may be influenced more by calving practice than by breed. Another section of this report discusses the financial performance of herds meeting the seasonal calving/milking definition.

With Holstein and non-Holstein being the two largest "breed" groups, the third largest number of observations is the mixed group with 28 observations in 2003, 26 in 2002 and 19 in 2001. The mixed group is the most Holstein-like subset of the non-Holstein group.

A mixed herd could consist of up to 85% of one pure breed. In the data, none of the mixed herds comes that close to being in another category. Several of the mixed herds are between 50 and 84% Holstein. One herd was 75% Ayrshire. Other mixed herds do not have a breed that makes up as much as 50% of the total.

It is difficult to compare mixed or crossbred herds as a group with any other breed group, because no two crossbred or mixed herds are alike. **The best comparison that can be made with this group of data is to compare Holstein with non-Holstein herds for a couple of years before trying to propose conclusions.** Not even this comparison was made for 2000 because many herds in the 2000 data were not categorized as precisely as previously described. Yet, because the mixed group is sizable, it is shown in the table in the third year report. While not shown in the 2003 table, the relative performance of the mixed group was similar to the performance of the non-Holstein group.

In 2003, 2002, and 2001, the herds with 85% or more Holsteins had noticeably higher NFIFO/Cow and NFIFO/CWT EQ than the non-Holstein herds. The Holstein advantage was larger with the NFIFO/Cow measure than when measured by NFIFO/CWT EQ. This is contrary to a fairly common belief that the Holstein is a less profitable breed for grazing systems. Because a dairy farm is a very complex business with many variables, the differences in profit levels between the two groups cannot be entirely credited to the breed of cows. For example, while the years of grazing and farming experience for all of the graziers is not available in the data, it does appear that Holstein herds tend to also have the more experienced managers. The managers with more years of experience have had more time to increase equity and decrease debt. Such factors may be responsible for some of the difference in performance between the Holstein herds and those called non-Holstein.

Therefore the results don't allow us to say that one breed is more profitable than the others.

The NFIFO/Cow and NFIFO/CWT EQ are shown in the Table 6.1 for each the Holstein and non-Holstein groups.

Because of rounding, some small mathematical differences might be found in the summary tables below.

Table 6-1 Performance Measures the Average Performance of Grazing Farms From Many States by Herd Breed- 2003-2001									
	Holstein			Non-Holstein			Average		
	2001	2002	2003	2001	2002	2003	2001	2002	2003
Number of Herds	70	63	61	54	40	41	126	103	102
Number of Cows per Herd	74**	74**	72	97	105	111	84	86	87
Average Lbs. Milk per Cow	16,817	17,277	17,187	14,093	13,165	13,649	15,426	15,332	15,381
Average Lbs. Milk per Herd	1,247,371	1,280,295	1,229,971	1,371,647	1,378,691	1,515,252	1,303,333	1,318,507	1,344,643
Group Average Mailbox Milk Price	\$16.17	\$13.92	\$13.73	\$16.54	\$13.46	\$15.19	\$16.31	\$13.73	\$14.39
U.S. All Milk Price (used in calculating CWT EQ)*	\$14.94	\$12.15	\$12.50	\$14.94	\$12.15	\$12.50	\$14.94	\$12.15	\$12.50
Average Basic Cost per CWT EQ	\$8.30	\$7.36	\$7.68	\$8.89	\$8.29	\$7.98	\$8.60	\$7.74	\$7.79
Allocated Cost per CWT EQ	\$11.25	\$10.10	\$10.34	\$12.18	\$10.96	\$10.44	\$11.68	\$10.45	\$10.39
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.95	\$2.74	\$2.66	\$3.29	\$2.67	\$2.46	\$3.08	\$2.71	\$2.60
NFIFO per Cow (without deducting any labor compensation)	\$982	\$792	\$767	\$758	\$428	\$578	\$866	\$620	\$662
NFIFO per CWT EQ (without deducting any labor compensation)	\$4.69	\$3.18	\$3.24	\$4.05	\$2.25	\$2.90	\$4.39	\$2.80	\$3.07
NFIFO per Farm	\$57,199	\$37,812	\$36,823	\$50,201	\$13,759	\$45,560	\$54,283	\$32,354	\$40,335
NFIFO per Cow	\$771	\$510	\$515	\$515	\$227	\$410	\$643	\$376	\$461
NFIFO per CWT EQ	\$3.69	\$2.05	\$2.16	\$2.76	\$1.19	\$2.06	\$3.26	\$1.70	\$2.11

**By coincidence both herd sizes are equal

*See Chapters IX and X for more information about CWT EQ and cost categories.

XIX. Preview of Organic Dairy Farm Financial Performance

Potential organic dairy producers want to know three things about the economic impact of choosing that system:

1. What are the potential rewards once the goal is achieved?
2. How long will it take to attain the goal?
3. What will it cost to attain the goal?

Consequently, analyzing the economic performance of organic farms is fairly complex.

It is often said “when switching from conventional to organic, things will get worse before they will get better.” To better understand and fairly compare the financial performance of organic farms, the stages of progression of individual organic farms should be recognized.

This project seeks data from farms in each of the following stages or categories of organic production:

- A. **Pre-organic-** The period of operation of a farm before it attempted to become organic. Since anyone not attempting to become organic could be called pre-organic, it may not be as important to gather data from that period as it is to gather data from farms at some other “organic stage.”
- B. **Transitional organic-** The period of operation of a farm from the time it began to adopt organic practices until achieving organic certification. This is expected to be the least profitable stage.
- C. **Certified organic-** The period of operation of a farm from the time it achieved organic certification until receiving organic milk price premiums.
- D. **Certified market organic-** The period of operation of a farm during which it receives organic milk price premiums.

In reality, few farms will supply financial data from years prior to the point at which they “join the project.” At times farms may slip into and out of the above stages or categories, especially between certified organic and certified market organic. Some certified organic producers only obtain organic premiums for part of the year. When that happens, additional judgment will be required to determine the best way to sort the data.

Data from organic dairy herds is scarce.

2003 data was collected from eleven herds selling all of their milk to an organic market. One each were from New York and Ontario. Nine were from Wisconsin. Data was collected from nine herds selling all of their milk to an organic market in 2002, ten in 2001 and five in 2000. Six were from Wisconsin and three from New York in 2002 versus six and four in 2001. All five organic herds in 2000 were from Wisconsin. The number not practicing MORG were two in 2003, three in 2002 and 2001, and four in 2000. Two of the 2003 and one of the 2002 herds practiced seasonal calving. Only two of these organic herds have supplied their data from the pre-organic to the certified market organic stage. Readers of previous editions of this report may recognize that the number of organic farms supplying data for the years 2000-2002 has increased from what had been reported in earlier reports.

Clearly the 2003 and 2000 organic data is dominated by Wisconsin. New York and Wisconsin have about an equal influence in the 2002 and 2001 data. Wisconsin had more farms in each year but the largest average size of the New York farms provides a “balance.” Since the Wisconsin and New York grazing financial performance is fairly similar in 2003, state-to-state differences may not distort the data much in 2001 to 2003.

Even three years of data from this number of organic herds is insufficient to make creditable judgments, and only selected numbers will be printed below from organic herds.

The average organic dairy farm that submitted data in 2003 was smaller, sold fewer pounds of milk per Cow and per farm than the average grazing herd in 2003. The average organic dairy farm that submitted data in 2002 was larger, sold fewer lbs. of milk per Cow, but more lbs. of milk per farm than the average grazing herd in 2002. In 2001, the average grazing organic herd was smaller, sold fewer pounds of milk per Cow and per farm than the average grazing herd. The amount of NFIFO generated each year by the average organic farm was enough to satisfy most farm managers. This is explained in part by the higher average price per CWT of milk sold by the organic herds. Their milk price was \$20.42 compared to the \$14.39 for the average grazer in 2003, \$19.57 compared to \$13.73 for the average grazer in 2002, and \$19.99 compared to \$16.31 for the average grazer in 2001.

Appendix 1

The Agriculture Financial Advisor (AgFA[®]) program has been developed to assist in the collection, analysis, storage of financial data and certain farm profile information from all farm types. Dr. Gary Frank, Randy Gregory, 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 (Schedule F, line 11)	\$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 (On this worksheet, add lines 1 through 5.)	\$144,677	_____	
7. Average Milk Price ³ Use \$12.50 when calculating 2003 cost of production.	\$ 12.86	_____	
8. Hundredweight Equivalents (CWT EQ) of Milk Produced Critical Value⁴ (On this worksheet, divide line 6 by line 7)	11,250	_____	
9. Total Schedule F Expenses (Schedule F, line 35)	\$122,521	_____	
10. Change ² in Accounts Payable	\$ 1,543	_____	
11. Change ² in Prepaid Expenses	\$ 1,200	_____	
12. Total Allocated Costs (On this worksheet, add lines 9 and 10, then subtract line 11)	\$122,864	_____	
13. Total Interest Paid (Add Schedule F lines 23a and 23b)	\$ 8,470	_____	
14. Wages and Benefits Paid (Only those reported on Schedule F; to obtain this value add Schedule F lines 17, 24, and 25)	\$ 12,682	_____	
15. Depreciation Claimed (Schedule F line 16 minus Depr. claimed on livestock)	\$ 15,346	_____	
16. Total Basic Costs (On this worksheet, line 12 minus lines 13, 14, and 15)	\$ 86,366	_____	
17. Basic Cost per CWT EQ ⁵ (On this worksheet, line 16 divided by line 8)	\$7.68	_____	Goal <= \$8.00
18. Total \$'s available for other costs ⁶ (On this worksheet, line 6 minus line 16)	\$58,311	_____	
19. Basic Cost Margin per COW (On this worksheet, divide line 18 by average number of cows, both milking and dry, in herd.)	\$1,166	_____	Goal => \$1,200
20. Total Allocated Costs per CWT EQ (On this worksheet, divide line 12 by line 8)	\$10.92	_____	
21. Total \$ available to cover unallocated costs ⁷ (On this worksheet, (line 7 minus line 20) times line 8)	\$21,825	_____	
22. Unpaid labor & management charge per CWT EQ (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.)	\$1.98	_____	
23. Total Allocated plus unpaid labor & management (On this worksheet, add lines 20 and 22.)	\$12.90	_____	Goal <= line 7

The footnotes are on the back of this page.

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, \$14.94, \$12.15, and \$12.50 in 1990 - 2003, 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 your 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, \$7.75, \$7.91, \$9.03, and \$7.70 in 1992-2003, 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[®]) – The computer program used to analyze the data in this report.

Allocated Costs - equals total cost minus the opportunity cost of unpaid labor, management and capital supplied by the owner(s). Since opportunity cost is not consciously calculated by everyone, allocated cost is often used by non-economists as a default proxy for total cost. Allocated cost also equals total income minus NFIFO. See Chapter IX for more information.

Basic costs - equals allocated cost minus, interest, non-livestock depreciation, paid labor, and paid management. See Chapter IX for more information. Also see non-basic costs.

CCC - Commodity Credit Corporation

CMV - Current Market Value Asset Valuation Method

COP - Cost of Production

Continuous calving/milking- A calving/milking strategy in which calving is distributed among most months of the year. Cows are milked every day of the year.

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 other variables for analysis purposes.

*In contrast, the number at the top of the CWT **sold** column on the cost of production reports is the **INCOME per 100 pounds of milk sold** by the business. **It is not the milk price.** The income per 100 pounds of milk sold is calculated by dividing total farm income by the hundredweight of milk sold. This is necessary because each expense item is divided by the hundredweight of milk sold. Therefore these expense amounts must be compared to the **INCOME per hundredweight of milk sold** and not to the price of milk. See Chapter X for more information.*

GLGN - Great Lakes Grazing Network

Group average mailbox milk price- is calculated in this report by summing all the gross income from milk sales from all of the farms in the group and dividing that sum by the sum of the total hundredweights of milk sold by all the farms in the group.

HC - Historic Cost asset valuation method

IFAFS - 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.

Non-Basic Costs – are interest, non-livestock depreciation, paid labor and paid management. The four non-basic costs are added to basic cost to become allocated costs. See Chapter IX for more information.

Opportunity Cost- A simple definition of opportunity cost is “the best alternative return that could be earned by the operator's labor, management, and equity capital.”

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: $\text{Return on Farm Assets} = \text{Net Farm Income} + \text{Farm Interest} - \text{Value of Operator's Labor \& Management}$ 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: $\text{Return on Farm Equity} = \text{Net Farm Income} - \text{Value of Operator's Labor \& Management}$, and $\text{Average Farm Net Worth} = \frac{(\text{Beginning Farm Net Worth} + \text{Ending Farm Net Worth})}{2}$.

Seasonal Calving/Milking- A calving/milking 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.

Semi-Seasonal Calving/Milking- A calving/milking strategy in which at least one cow is milked every day of the year. Calving is “bunched” in one or two times of the year, cull healthy, productive animals that don't conceive in the breeding window are not culled.

USDA - United States Department of Agriculture

U.S. All Milk Price- is calculated by the USDA by summing all the gross income from milk sales from all of the farms in the country and dividing that sum by the sum of the total hundredweights of milk sold by all the farms in the country. This price is used for the Hundredweight of Milk Sales Equivalent (CWT EQ) calculation. See Chapter X for more information.

*In contrast, the number at the top of the CWT **sold** column on the cost of production reports is the **INCOME per 100 pounds of milk sold** by the business. **It is not the milk price.** The income per 100 pounds of milk sold is calculated by dividing total farm income by the hundredweight of milk sold. This is necessary because each expense item is divided by the hundredweight of milk sold. Therefore these expense amounts must be compared to the INCOME per hundredweight of milk sold and not to the price of milk. See Chapter X for more information.*