



DAIRY GRAZING FARMS FINANCIAL SUMMARY:

Regional/Multi-State Interpretation of Small Farm Data

Fifth Year Report

Data from 2004, 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 supporting the project and, in some cases, collecting data. Finally, the authors thank Ruth McNair, Jim Olson, Troy Van Beek and Lelah Jensen for proofreading and for processing words, charts, graphs, and tables.

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**Regional Multi-State Interpretation of Small Farm Financial Data
Fifth Year Report on 2004 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 (101 in 2004, 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 of graziers sorted by Net Farm Income from Operations per Hundredweight Equivalent (NFIFO per CWT EQ) shows a large range in financial performance. The ratio between the top half and the bottom half's NFIFO per CWT EQ and NFIFO per cow was greater in the lower profit years (usually with lower milk price) than in the higher profit years (see Chapter XIII).
- The average grazing herd with less than 100 cows had a higher NFIFO per cow and per CWT EQ than the average grazing herd with 100 cows or more. The smallest margin appeared in the 2003 data (see Chapter XIV).
- Non-seasonal calving/milking herds had a large NFIFO per cow and per CWT EQ advantage in 2000 and 2002. The seasonal herds (stop milking at least one day each calendar year) had a large NFIFO per cow and per CWT EQ advantage in 2001 and 2004 and a very small advantage in 2003. **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 system.** 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 were 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), except in 2004, when the average New York confinement herd had a slightly higher NFIFO per cow than the average New York grazer (see Chapters VI, XVII and XVIII).
- 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. Herds categorized as Holstein had higher levels of NFIFO per cow four consecutive years and NFIFO per CWT EQ three consecutive years than herds of other breeding (see Chapter XIX).
- Relatively consistent differences in financial performance between states have appeared in all years. These differences must be considered when interpreting the data (see Chapter VI).
- The ranking of major cost items is remarkably similar between grazing and confinement herds.

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

- The Farm Earnings report with the whole farm, per cow and per CWT EQ (see Chapter X).
- The Cost of Production report with the whole farm, per CWT sold, and per CWT EQ.
- The Financial Measures report (**Page 1 uses cost values. Page 2 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 fifth year report of the Regional Multi-State Interpretation of Small Farm Financial Data USDA IFAFS 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 CWT EQ of Milk sold method.

IV. Introduction

Aided by a USDA Initiative for Future Agricultural and Food Systems Grant, ten states and one province standardized data handling and analysis procedures in order to combine actual farm financial and some 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, 4}

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

The 2004 data was collected from a total of 112 grazing dairy farms. All have been analyzed; however, 11 of them were incomplete, so data from 101 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 2003, 2002, 2001, and 2000 reports summarized data from 102, 103, 126, and 92 graziers respectively. **A total of 203 different farms supplied at least one year of usable data to this project.**

Readers of this report may notice that when the 101 graziers are sorted into groups for comparison purposes, the number in a comparison group may add up to less than 101. For example, the “top half” group has 50 farms while the bottom half group has 50 farms. Fifty plus fifty is less than 101. What happened to the other one? 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.

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.⁵

V. Case Farm Reports from Ontario, Canada and Wisconsin

Not all graziers are created equal; consequently, there may not be a typical grazer. However, it may still be instructive to have a more personal glimpse 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 in an agriculturally productive dairy area. The other farm is located miles from the next farm that is milking dairy cattle.

One of the farms is very international, in which the family moved from Holland to Canada to farm in 1980. Both have grazed for many years. One has grazed about as long as anyone. One is organic.

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

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

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

Both are highly experienced and have performance levels higher than less experienced graziers should expect to achieve, at least in the beginning.

In fact, the achievements of the Wisconsin farm shows the potential but not the probable performance level for grazing dairy farms.

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 Peeter Case Farm from Ontario

The Peeter's farm has been in the family since 1958 when the family immigrated to Canada from Holland. Grass-based dairying has been a part of the family farm since the beginning. Harry and his brother Peter took over management and ownership of the farm in 1980. And then in 2001, the brothers dissolved their partnership. Peter and Harry each had different ideas as to where the dairy industry was going. Harry was optimistic about the future, where as Peter felt that there would be big change in the dairy industry. Harry and his wife Jeannie retained ownership in the dairy operation. They have four children aged 8 to 16 years who are active in the farm operation. The Peeters' goal is to develop and grow the farm so that they may pass it on as a viable operation for the next generation.

In 2001 the Peeters became a certified organic dairy farm but the farm had been using organic practices for about 10 years. There is a premium for organic milk in the Ontario marketplace and he was able to join an organic producer's cooperative. The system used by Harry generates \$US 68 per cow per month in premiums.

In the early 1990's Harry had stopped using antibiotics for mastitis treatment and found that he had fewer disease instances than previously. He feels that drugs are anti-progressive and the move to organic was a logical step for him to take. Organic farming is very good at keeping the immune system up. After making the switch, there have been no cows with mastitis. Harry feels that in most cases mastitis is caused by bad breeding and too many drugs in the young stock. Mastitis is resistant to most antibiotics, so when he was treating the cows he was getting flare ups, but now he doesn't treat the cows and there are no flare ups. His somatic cell count is consistently in the 200,000 range.

Cropping practices already utilized cultural weed control and livestock manure so the move to organic required very few crop management changes. The farm is tile drained with clay loam soil and the crops grown are hay, pasture, spring grain (oats & barley) and corn for grain. Harry puts up dry hay and baleage for the cattle. Hay fields are harrowed each spring to get rid of any dead material. The reason for the dead material is because he likes to have a lot of top going into the winter season to catch the snow. The 1st cut forage crop is taken as baleage and every effort is made to harvest early in the season, -when the dandelions are in bloom- which is about May 24. The legumes are at pre bloom stage and the early grasses are just headed out. The 2nd cut is all dry hay. On occasion there is a 3rd cut which is utilized as pasture, the cows take the leaves and leave the stems.

Early planting of the spring grain and corn allows the crops to get a head start on the weeds. He will also harrow the field before the weeds emerge. Mustard and sow thistles are the main weed concerns. Corn is only grown one year in the crop rotation. Just before the corn emerges he will harrow his fields to eliminate any competition from weeds, and the corn is scuffled twice after it emerges.

Forage fields are established with the spring grain crop and harvested for stored forage for the first 1-2 years. Each pasture starts as hay for the 1st year then gets turned into a pasture of 50% grass and 50% alfalfa. The preferred mix is alfalfa, brome grass, tall fescue, timothy and a small amount of white clover. Although Harry prefers grasses for pasture he relies on the drought tolerance of the alfalfa to produce mid summer pasture. Orchardgrass was used in the mix but he found that there was a problem with rust and feed refusal in the late summer.

Using rotational strip grazing, the cows are in a paddock for a maximum of 5 days and a new strip of pasture is provided after each milking. No back fences are used; he finds that the cows will often return to some of the coarser material that they initially refused. The first break that the cows are offered is usually about 25-30% of the field so that they have lots of room to spread out.

Another reason for the switch to organic was to keep his costs low. His animal health and veterinary expenses are 70-75 % less than the Ontario average. He also makes extensive use of pasture. This reduces the purchased feed cost and stored feed is only needed to be produced for the winter feeding period. Harry is spending \$US 250 per cow per year less in purchased feed compared to the average Ontario dairy farm and his total feed cost is \$US 350 per cow per year less. The savings add up to over a \$US 670 advantage over the Ontario average in total costs for the dairy enterprise.

The Charles and Claire Ylitalo Case Farm from Wisconsin^{6,7,8}

In some circles, Charlie Ylitalo is known as a grazer. In others he's well regarded as a breeder of registered Holsteins. Actually, he's both.

Charlie and his wife, Claire, milked 43 head on their northern Wisconsin farm, near Lake Superior before recently retiring.

Charlie and Claire are certainly not new to grazing. They've been at it about 40 years.

But unlike many graziers, the Ylitalos did not change their farming system to switch to grazing. Instead, they've kept right on farming just about the same way they always did.

Never Change

As Charlie explains it, "We never changed to the confinement way of farming," When the couple purchased the home farm from his parents, they simply kept on pasturing their cattle.

It's often heard from graziers that they like to think outside the box. But, often graziers are just climbing outside of one box and into another. We can box ourselves in by accepting rather than questioning commonly held notions such as: grazing cows results in lower production, though sometimes this is just an excuse to cover over poor management; or that high quality pastures are ones that are grazed between 6-10 inches high, though this usually results in feed that is too high in protein, too low in carbohydrates and fiber; that legumes can't be maintained in pasture without renovation; or that dabbling in crossbreeding will somehow magically get them the ideal grazing cow; or that Holsteins won't do as well as crossbred cows or Jerseys on pasture. Charlie and Claire have not allowed those beliefs affect them or sway what they do.

During a recent North-Central Grazer's Pasture Walk, Charlie explained that he is not enamored with grazing lots of cows in a small area. Yes, the amount of land cows are allowed access has shrunk over the years, but by many standards their present system would not be called "intensive."

From 20-acre pastures years ago, Charlie and Claire have gradually shrunk their paddocks to three or four acres. He says he is not interested in shifting to even smaller pastures.

"I don't see the advantage to it," Charlie remarks.

Average of 26,000

He points out that every farm is different. His cows are milking well – a 26,000-pound plus rolling herd average – on bluegrass and clover, plus supplemental feed that includes soybean meal and corn distillers' grains, along with haylage and high-moisture corn during the non-grazing season.

The Ylitalos milking and dry cows together graze areas of 40 acres of permanent pasture, along with second and third crop hay ground, depending on the conditions. Heifers, meanwhile, graze a separate 60 acres.

One thing a visitor to Ylitalo Holsteins notices right away is the pair of Harvestore silos – not hallmarks of many grazing farms. Charlie calls the blue structures "kind of a luxury," noting that they've been fixtures on the farm since 1980, storing haylage and high-moisture corn.

Pastures

⁶ This case farm report consists primarily of a merger of the following articles describing a pasture walk hosted by Ylitalos four months before they retired. The merging was done with the author's permission.

⁷ Nehring, Paul. Grass Works Inc. Newsletter. Vol. 4. Issue 3. Summer 2005.

⁸ Johnson, Ron. "Ylitalos Profitably Blend Grazing, Registered Cows." Dairy. Agri-view. Section C. July 28, 2005.

As the farm's pastures have matured and become more productive – thanks in part to a dense sod layer – Charlie has used feed from the silos less.

Surprisingly, while Charlie was almost apologetic about the condition of his pastures, many on the pasture walk were quite amazed with the pastures, not just the workhorse cows grazing them.

"It takes about 10 years to get a good pasture," according to Charlie. "In the middle of summer 25 years ago, we would have been feeding out of the silos because our pastures would have been shot. And now we haven't fed out of them (during the summer) since '87."

Charlie isn't a big believer in clipping pastures, except for weedy areas. Unclipped pastures, he says, create more shade, are cooler, and hold more moisture.

"When you clip 'em, it looks nice and they green up right after that, but they don't grow," Charlie says.

As an experiment a few years back, Charlie clipped one pasture but did not clip the one right next to it.

"It was dry, and you could really see the difference," he recalls. "The one that wasn't clipped looked a lot better."

His pasture management may be considered lax by some standards, because he typically moves cows only once every 3-5 days. Yet, despite not moving cows every milking, he is still managing his pastures to prevent cows from eating re-growth, and they are also managed so that the stands are much higher than what most graziers turn their cattle into. While we were there, cows were grazing two foot tall pasture, much of which was headed out. Ten to twenty percent of the legumes were going to seed. Charlie's taller stands did not allow for the tight dense sods to form, yet there was dense pasture for the cows to graze. It was easy for the cows to find mouthfuls of pasture. Also, when the grass was pulled back to expose the soil, it was evident that seeds were hitting the ground.

It's because some of the grass and legumes are allowed to go to seed and can actually hit the ground, that these pastures, some are 3rd generation (80-90 year old), contain significant amounts of legumes and at least 13 different species of forages. There is a fair amount of red clover, ladino, white clover, trefoil, and alfalfa plants mixed in with the bluegrass, reed canary, orchardgrass, quackgrass, brome, and fescue. The pasture we were in had never been seeded, or overseeded by Charlie. It was all from previous generations.

While many graziers are struggling to keep legumes in their pastures, it may be that we are grazing at too low a height, and that we are working against nature. Nature will keep those legumes in the stand if they are allowed to go to seed occasionally. Remember, that the grazing model we have adopted is largely the New Zealand system. Yet, Kiwis struggle to keep legumes in their pastures. Instead they rely on perennial ryegrass and nitrogen fertilizer. It's worked because ryegrass is perennial in their environment, nitrogen costs have been affordable, and nobody looked at nitrates that are now being discovered in the ground water. Ironically, researchers in Ireland are actually looking to managed grazing systems in the U.S. to see how we are able to utilize legumes for nitrogen. It may seem heresy to some, but Charlie's management system for his pastures might just hold the answer.

Taller grasses provide an important function, he reminds. Since they are stemmier and contain more fiber, they help maintain a cow's rumen function well. And, he asserts, "The cows milk on it."

Charlie offers more proof that his pastures are productive. At 10 months old, heifers do not get grain again until they freshen. Charlie says feed company representatives tell him, "Your cattle can't look that good without grain – just grass and hay." He adds, "Most of ours are in great shape."

Along with relying greatly on their pastures for much of the cattle's feed, Claire and Charlie have found it profitable to not grow corn – or soybeans, or small grains. Instead, they buy high-moisture corn.

"None of my fields have been plowed for over 20 years," Charlie states. "Once I stopped plowing (and quit growing corn) I started making money."

Emphasis on cattle

As the 40-or-so people at the pasture walk soon learned, Charlie loves to talk about registered Holsteins and genetics. In fact, it seems that those topics interest him more than grazing itself does.

He told Agri-View, “I wouldn’t be farming if it wasn’t for the cattle end of it.”

“Genetics is the one thing that’s gone backwards,” Charlie asserts. “The interest in genetics has gone totally backwards for the last 15 years.”

“People will get out a book and spend hours deciding which corn seed they should plant,” he continues. “The corn seed they pick affects them for one year... And yet, (the typical thinking sometimes is) ‘What’s on sale, I’ll breed the next 30 cows to that bull because I got a good deal on it.’”

Not Charlie. He admits to making genetics decisions “sometimes years in advance,” but more often months ahead of time.

“The big advantage (to making sound breeding decisions) is learning your cows,” he says. “If she’s got an Excellent daughter standing next to her, I’m going to use the same bull on her again.”

Too much emphasis has been placed on sires, Charlie says.

“Your good cows come from good cows,” he contends.

“We never had an Excellent cow until 1990. Since 1990 we’ve bred 24 of them – all from our homebred cows.”

Patience important

It’s not that 1990 was any sort of special year. It’s simply when the culmination of years of wise breeding began to manifest themselves.

“We had lots of Very Good cows before that,” Charlie points out. “It’s patience. A word that has disappeared from the English language is ‘patience.’”

Charlie took over management of the farm’s dairy herd while he was in high school. Half a dozen years later, in 1967, he bought his first registered cattle.

Nearly four decades have yielded steady progress in the herd’s production. Way back when, cows in the Ylitalo herd carried an average of 13,000 pounds. Today it’s above 26,000 and was, for a time, above 27,000 pounds.

It’s come down since last year because Claire and Charlie sold three Excellent cows. Two topped the Barron County Holstein Association Sale and the other topped the Clark County sale, Charlie says.

In addition, they sold several more privately, a common practice for the Ylitalos. Charlie notes that over the last 10 years they’ve sold an average of 14.1 milking cows a year into other herds.

“Most of them went into confinement. We’ve had four out of the five people call and ask to buy more,” Charlie says.

Longevity emphasized

Along with liking big cows that can eat a lot, Charlie looks for longevity.

“Longevity,” he says, “gives you more chances to keep the right cows in your herd. Then you develop families that do better than other families. The ones that have stayed around the longest, you want their daughters because they carry the same traits.”

Charlie figures people who milk seasonally are shooting themselves in the foot when it comes to greatly improving their herds.

“Generally, the best cows are the ones that are under the most stress and don’t breed back in their (seasonal) window,” Charlie says. “They’re getting rid of their good milkers by trying to make the cows fit their system.”

That said, Charlie pointed out that he uses bovine somatotropin (BST) in a limited way. At the time of the pasture walk, he explained that he is administering BST to four cows that are getting bred back late. He termed bovine growth hormone “good stuff” for some cows.

However, he again emphasized the importance of genetics in building a quality herd and getting top milk production.

“Genetics,” he said, “is simply cutting the odds. I’d rather take my chances breeding a daughter from three generations Excellent to an Angus bull than breed a cow from three generations of poor cows to a top Holstein.”

Besides breeding several Excellent Cows, Charlie and Claire have placed bulls into AI and have received the Progressive Breeder Award 12 years running.

“It didn’t look like we were ever going to get there,” Charlie admits. “But if you have the patience and learn from your mistakes...”

“I should have started with better cattle,” he adds. “We’d have got there quicker.”

For a few years, Claire and Charlie tried to squeeze milk production from cows that just did not have the genetics to do so.

“It doesn’t pay to put up feed (for poor cows),” Charlie says. “If a cow’s going to make 14,000 pounds of milk, she can make that on just about sawdust. It would be like buying aviation fuel and running it in a John Deere B.”

He uses another example to illustrate his point: “Why do I have one cow that’s making 27,000 pounds and a cow two stalls away is making 33,000?” he asks. “They’re both getting the same feed, the same care – everything. It’s genetics.”

To attain that high production, Charlie feeds up to 40 lbs. of concentrate/day – 20 lbs. is the average – along with dry hay. The dry hay is what keeps the rumens functioning properly and essential to keeping cattle productive and healthy. The hay is grassy hay from their pastures that is high quality. Their pastures usually test around 15% crude protein, which most dairymen would consider low, and which is much lower than the high octane pasture most dairy graziers feed. Yet, since cows shouldn’t have higher than 16.5% protein, his pasture isn’t far off the mark, and doesn’t cause high levels of blood urea nitrogen from excessive protein.

Profits compared

Charlie isn’t hesitant to share his farm’s profitability numbers. For years he has participated in a UW-Madison grazing study.

According to those numbers, the Ylitalos have had a basic cost of milk production below \$6.85 per hundredweight equivalent (CWT EQ) for at least the last 10 years. And, they’ve been more profitable than the average grazing dairy farm in the study.

In 2002, a year of generally low milk prices, their profit per cow tallied \$1,753. By contrast, the average net profit per cow of everyone in the study during 2002 came in at \$524 – nearly two-thirds less than the Ylitalos.

“My dad always said there’s gotta be money ‘n farming; there’s so much put in and so little taken out,” Charlie quips.

Not ‘low-input’

Seriously, Charlie acknowledges not being a “low-input” grazier. He points out that some folks cut costs in an attempt to make more money, while others spend more to make more.

“Of the two philosophies, I try to get in the middle,” Charlie explains. “I try to do both of ‘em. And I think it’s real hard – real hard.”

But Charlie and Claire seem willing to meet challenges head on. He points out that even during the drought of 1988 they did not buy any hay, but worked to make enough from their farm.

They also believe in paying for things with good-old-fashioned cash. Charlie reveals, “We’ve never had a loan in our lives, but for the land contract on the farm.”

Claire deserves credit

Charlie gives Claire much of the credit for the farm being successful, noting that she knows the cows as well as he does.

Claire and Charlie have three children – Cliff, Carol, and Clint. Charlie says none of them are interested in taking over the home farm, though Cliff is employed at a nearby 180-cow dairy.

Try new things

Charlie offers words of advice and encouragement to other graziers:

“Don’t get wrapped up in the New Zealand method. Be an individual and do what you want to do. Don’t be so scared of trying something new and different. I’ve tried stuff I dropped like a hot potato when it didn’t work.

Asked for an example, he replies that he started breeding for “numbers.” People who have never bred a cow were telling you how to breed cows. I’ve got bulls in studs and all of a sudden I told myself, ‘I’ve got to start breeding their way instead of my way. Their way didn’t work.”

Charlie recommends, “Find what works for you and what you like.”

This Charlie-ism drew chuckles of recognition from the visiting graziers: “About the time you learn how to farm it’s time to quit.”

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 measure, judge, or even see.**

Most of the data in all five years has come from Michigan, New York, Ohio, 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 a dairy industry as large as the states supplying more data.

Differences in financial performance between states have appeared in this project’s dairy farm financial data in all five years. Since the relative ranking of the states by financial measure has been fairly consistent across the five years, Chart 1 shows the multi-year simple average relative ranking.

Chart 1-1: Five Year (2000-2004) Simple Average Ranking of the States from Most Desirable Value to Least Desirable Value for Several Financial Measures

Rank	1	2	3	4	5
NFIFO/Cow	Ontario	Wisconsin	New York	Ohio	Michigan
NFIFO/CWT EQ	Wisconsin	Ontario	Ohio	New York	Michigan
Basic Cost/CWT EQ	Wisconsin	Ontario	New York	Michigan	Ohio
Non-Basic Cost/CWT EQ	Ohio	Wisconsin	New York	Michigan	Ontario
Allocated Cost/CWT EQ	Wisconsin	Ontario	Ohio	New York	Michigan

The ranking has changed slightly from year to year as explained in the following discussion of the causes of the differences. However, a considerable difference in financial performance typically occurred between the top two ranking states and the bottom two ranking states.

It is impossible to explain every factor causing state-to-state differences but these occurrences were 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.

The following factors likely contribute to the state-to-state differences.

- The discovery of Bovine Spongiform Encephalopathy (BSE) in Canada on May 20, 2003 had a big impact on the balance sheets and income statements of the Canadian livestock industry since then. Statistics Canada reported that in 2003, for beef operations, a 3% increase in land and buildings was offset by a 28% decline in livestock asset values resulting from the BSE crisis, and a 7% increase in liabilities (mainly long-term). Although the Ontario dairy graziers did not rely heavily on livestock sales, the impact was still very evident on their income statement. Their average net farm income dropped 27% in the years after BSE. Two-thirds of this drop can be attributed to the drop in livestock sales. Their livestock sales pre-BSE represented around 28% of their net farm income; that dropped to 10% in the post-BSE years, resulting in an 18% drop in net farm income between the two periods. Also contributing

to the decrease in net farm income was the increased feed and housing costs of holding livestock in inventory on the farm since there were limited marketing opportunities for them. Livestock inventories increased approximately 5 %. This made Ontario's 2004 financial performance atypically low.

- 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 Ontario milk price advantage was much smaller in 2004 and 2001 than in the other years. 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, 2003, and 2004. Michigan was second lowest in 2000 and 2001. These price rankings are based on the herds in the summaries but are similar to ranking of whole state averages calculated by USDA.
- Weather can also cause state-to-state differences in profitability. The general climate is fairly similar across the states and provinces 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. 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.
- Feed (purchased and 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. Still, purchased (forage and grain) feed costs may also partially explain the state-to-state differences.
- **Chart 1-2 Five-Year (2000-2004) Simple Average Ranking of States' Cost of Purchased Feed per CWT EQ from Most Desirable Value to the Least Desirable Value**

1	2	3	4	5
Ontario	Wisconsin	Michigan	New York	Ohio
\$1.75	\$2.70	\$3.06	\$3.09	\$3.61

There was a tremendous range from lowest to highest purchased feed cost. In fact, the highest is more than twice as high as the lowest. At least some of the difference is influenced by the proportion of feed raised by graziers in each state.

The group of graziers that shared data from Ohio grew less of their non-grazing season feed in contrast to the other graziers who shared data. At the other extreme, Ontario graziers grew most of their forage and grain. Michigan graziers grew all of their forage and 80% grew their own grain. Wisconsin and New York graziers grew most of their forage but very little grain.

In an attempt to approximate the cost of raising feed, plus the cost of purchased feed, the easily measured cost categories of chemicals, custom machine work, fertilizer and lime, gas, fuel, and oil, seeds, and other crop expense were summarized for each state and shown in Chart 1-3 below.

Chart 1-3: Five Year (2000-2004) Simple Average Ranking of States' Selected Feed Raising Costs (Chemicals, Custom Machine Work, Fertilizer and Lime, Gas, Fuel, and Oil, Seeds, and Other Crop Expense) per CWT EQ from Most Desirable Value to Least Desirable Value

1	2	3	4	5
Ohio	Wisconsin	Michigan	New York	Ontario
\$1.02	\$1.11	\$1.44	\$1.45	\$1.79

Ontario had the highest estimated cost of raising feed/CWT EQ in most years in contrast to having the lowest purchased feed cost. The opposite was true for Ohio. While the per cow version of these

comparisons isn't shown here, they show similar results. Combining the cost of purchased feed and the selected feed raising costs in Chart 1-4 should narrow the state-to-state differences.

Chart 1-4: Five Year (2000-2004) Simple Average Ranking of States' Cost of Purchased Feed plus Selected Feed Raising Costs (Chemicals, Custom Machine Work, Fertilizer and Lime, Gas, Fuel, and Oil, Seeds, and Other Crop Expense) per CWT EQ from Most Desirable Value to Least Desirable Value (combines values from charts 1-2 and 1-3)

1	2	3	4	5
Ontario	Wisconsin	Michigan	New York	Ohio
\$3.53	\$3.81	\$4.50	\$4.54	\$4.63

As expected, combining the cost of purchased feed and the selected feed raising costs in Chart 1-4 did narrow the margin of difference from lowest to highest. Yet the two lower cost "states" had a noticeable advantage compared to those states that follow. Because the CWT EQ method indexes costs to the value of a CWT of milk, the higher milk price received in Ontario explains part of the Ontario advantage in purchased feed cost/CWT EQ and overall feed cost/CWT EQ.

- Several years of New York and Wisconsin confinement dairy farm data indicate that larger herds have lower levels of NFIFO per cow and NFIFO per 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 per cow and NFIFO per 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, Ohio and New York grazing herds in this project were larger than the average herds from the other states. However, the smaller herds in these states perform (in terms of NFIFO per cow and NFIFO per CWT EQ) at levels fairly similar to the larger herds in these states in most years. Consequently, size appears to be only a minor factor in the state-to-state differences that are observed.

Chart 1-5: The Five Year (2000-2004) Simple Average Number of Cows per Herd per State

1	2	3	4	5
Ohio	Michigan	New York	Wisconsin	Ontario
119.40	116.80	101.70	62.80	50.80

Further analysis of grazing financial performance, milk prices and management practices is needed to further 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 method 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.

Because HC asset values are generally less than CMV values, the Rate of Return on Assets (ROROA) calculated with HC values will often be higher than the ROROA calculated with CMV values. In addition, the HC based NFIFO values are usually lower than the NFIFO values based on CMV.

ROROA is one of the most comprehensive 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' calculates and reports NFIFO and ROROA using both HC with tax depreciation (**page 1**) and CMV of assets and economic depreciation (**page 2**). This project 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 are also used in 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)

Since 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).

In the calculation of NFIFO, all costs are accounted for EXCEPT the opportunity cost of unpaid labor, management and equity capital. All costs combined except opportunity costs are called total allocated costs. Total allocated costs are subtracted from total income to calculate NFIFO. When opportunity costs are calculated and added to total allocated costs, the result is what economists call total costs. A simple definition of opportunity cost is: "The return to unpaid labor or unpaid management or equity capital in its best realistic alternative use."

In large companies such as publicly traded companies, there are NO opportunity costs of **unpaid** labor, management and equity capital, because all work and management is performed by paid employees, and dividends are paid to the stockholders which own the equity. Total income for such businesses must regularly exceed total costs to be considered profitable. Most industries are dominated by businesses that are able to pay total costs.

However, in the case of many dairy farms, one person or family supplies all of the unpaid labor, management and equity capital. In such cases, the value of unpaid labor, management and equity capital must be estimated to determine if total income exceeds total cost.

The total cost of production for businesses that have no unpaid labor, management and equity capital is more accurate than those which have unpaid costs because there isn't a universally agreed upon best method for calculating the opportunity cost of unpaid labor, management and equity. Therefore, special caution is required when interpreting total cost data from businesses such as small family farms when you do not know the method used to calculate the opportunity costs or the amount of those costs.

NFIFO is the return to the resources that farm families contribute to the farm business. The resources are unpaid family labor, unpaid family management, and the family's equity (net worth) in the farm business. **Quite often, NFIFO is less than the opportunity cost of unpaid family labor, management and equity capital.** NFIFO is seldom all cash.

For the farm family without non-farm income, NFIFO (plus depreciation taken) is the source of funds for family living expenses, including housing and furnishings, food, medical expenses, children's education, the family car, entertainment, social security taxes, income taxes, and other personal items. It also represents money to pay principal on borrowings for land, buildings, and equipment and is a source of funds for new business and personal savings.

When there is no outside source of income and NFIFO is less than the family living expenses, equity will decline, whether or not NFIFO exceeds opportunity costs. The cash to pay for living expenses above NFIFO may come from loans, savings, or from the portion of net farm earnings allocated to capital item or inventory adjustment. When the latter happens, it is often said that the family is living off of depreciation. This is a way in which cash flow can hide a lack of profitability.

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 greatly differing size and type that are not adequately handled by these traditional measures. Therefore, other measures can also be useful.

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.

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

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.

A comprehensive evaluation of the cost of production of any business will examine several levels of cost including basic, non-basic, allocated and total costs. All 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 these cost categories.

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

CWT EQ is an indexing procedure focusing 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. making the use of an equivalent unit essential. In addition, most dairy farms do not separate the cost of producing crops sold for cash 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:

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

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

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

The U.S. All Milk Price per Hundredweight for 2004 is \$16.10.

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.

***The U.S. All Milk Price** is calculated by the USDA as the total gross income from milk sales from all of the farms in the country and divided by 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 101 graziers in 2004 and repeats comparable numbers from 102 graziers in 2003, 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 2004, 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 101 Grazing Farms in 2004, 102 in 2003, 103 in 2002, 126 in 2001 and 92 in 2000 (Also see Chapter XVIII Entitled Major Cost Items)

The historic (HC) asset valuation method was 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 current market value (CMV) of assets will be misleading. The grazing dairy farm families providing 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, 102 and 101 respectively in 2002 through 2004. 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 are 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 and 2004. Some of the year-to-year differences are explained by changes in the average multi-state grazier mailbox milk price received (from \$17.68 in 2004, to \$14.39 in 2003 to \$13.73 in 2002 to \$16.31 in 2001 to \$13.16 in 2000). *The **average mailbox milk price** received in this report is calculated by summing 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 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 US All Milk Price was \$16.10 in 2004, \$12.50 in 2003, \$12.15 in 2002, \$14.94 in 2001, and \$12.33 in 2000. The financial performance in 2004 was the highest of five years followed by the 2001 performance. Basic, allocated and non-basic costs were highest in 2004 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.

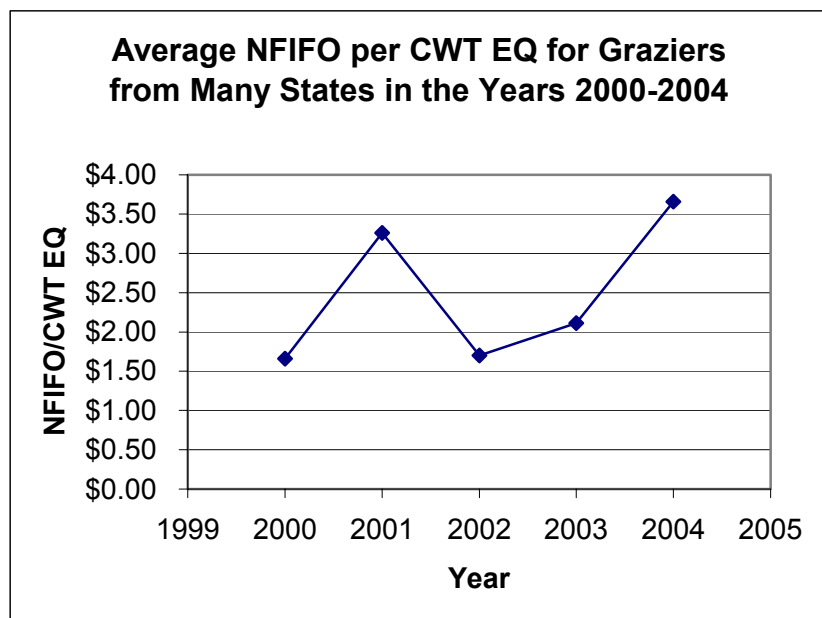
NFIFO per cow, NFIFO per CWT EQ and total NFIFO in 2004 were a bit higher than in 2001 and much higher than in the other years. Graph 1-1 provides a snapshot of the average NFIFO per CWT EQ from Table 1-1.

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. Now, the last four years show a more level “pattern.” 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 were the same from one year to another.

NFIFO if all labor and management was unpaid 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.

If all labor and management compensation was unpaid, NFIFO per CWT EQ would increase substantially in all years. Paid labor and management compensation averaged \$1.08/CWT EQ in 2004, \$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.

Graph 1-1



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	2004
Number of Herds	92	126	103	102	101
Number of Cows per Herd	90	84	86	87	93
Average Lbs. Milk per Cow	16,836	15,426	15,332	15,381	15,671
Average Lbs. Milk per Herd	1,511,264	1,303,333	1,318,507	1,344,643	1,462,136
Group Average Mailbox Milk Price	\$13.16	\$16.31	\$13.73	\$14.39	\$17.68
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.33	\$14.94	\$12.15	\$12.50	\$16.10
Average Basic Cost per CWT EQ	\$7.83	\$8.60	\$7.74	\$7.79	\$9.32
Allocated Cost per CWT EQ	\$10.67	\$11.68	\$10.45	\$10.39	\$12.44
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.84	\$3.08	\$2.71	\$2.60	\$3.12
NFIFO per Cow (if all labor was unpaid)	\$577	\$866	\$620	\$662	\$981
NFIFO per CWT EQ (if all labor was unpaid)	\$2.60	\$4.39	\$2.80	\$3.07	\$4.74
NFIFO per Farm	\$33,098	\$54,283	\$32,354	\$40,335	\$70,691
NFIFO per Cow	\$395	\$643	\$376	\$461	\$758
NFIFO per CWT EQ	\$1.66	\$3.26	\$1.70	\$2.11	\$3.66

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

See the following tables (1-2 to 1-5) for more details about the average performance of the 101 graziers in 2004.



Table 1-2, Part 1
The Average AgFA© Farm Earnings Report for 101 Great Lakes Graziers

Income	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	63.81	0.68	0.00
Basis in Resale Livestock Sold	(114.46)	(1.23)	(0.01)
Animal Product Sales	259,466.70	2,780.99	13.42
Raised Non-Breeding Livestock Sales	6,463.15	69.27	0.33
Crop Sales	1,802.31	19.32	0.09
Distributions Received from Cooperatives	420.67	4.51	0.02
Agricultural Program Payments	5,875.30	62.97	0.30
MILC Program Payments	398.37	4.27	0.02
Crop Insurance Proceeds and Certain Disaster Payments	7.62	0.08	0.00
Custom Hire (Machine Work) Income	1,403.92	15.05	0.07
Other Income, Incl. Tax Credits, Refunds	3,633.44	38.94	0.19
Sale of Purchased Breeding Livestock	73.15	0.78	0.00
Basis in Breeding Livestock Sold	(620.56)	(6.65)	(0.03)
Sale of Raised Breeding Livestock	14,514.27	155.57	0.75
Total Cash Income - Basis Adjustments	293,387.68	3,144.56	15.18
Non-Cash Income			
Change in Raised Crop Inventories	4,169.06	44.68	0.22
Change in Remaining Current Assets	2,753.05	29.51	0.14
Change in Raised Breeding Livestock	10,869.21	116.50	0.56
Total Non-Cash Income	17,791.32	190.69	0.92
Total Income	311,179.00	3,335.25	16.10



Table 1-2, Part 2
The Average AgFA© Farm Earnings Report for 101 Great Lakes Graziers

Expenses	2004 per Farm	2004 per Cow	2004 per CWT EQ
Cash Expense			
Cost of Items for Resale	91.38	0.98	0.00
Breeding Fees	3,208.89	34.39	0.17
Car and Truck Expenses	800.65	8.58	0.04
Chemicals	1,958.44	20.99	0.10
Conservation Expenses	41.77	0.45	0.00
Custom Heifer Raising Expenses	439.71	4.71	0.02
Custom Hire (Machine Work)	8,729.40	93.56	0.45
Employee Benefits - Dependents	27.93	0.30	0.00
Employee Benefits - Non-Dependents	177.72	1.90	0.01
Feed Purchase	67,668.19	725.28	3.50
Fertilizer and Lime	7,672.07	82.23	0.40
Freight and Trucking	2,192.77	23.50	0.11
Gasoline, Fuel, and Oil	7,113.18	76.24	0.37
Farm Insurance	3,882.94	41.62	0.20
Mortgage Interest	9,445.78	101.24	0.49
Other Interest	2,270.60	24.34	0.12
Labor Hired - Dependents	1,075.05	11.52	0.06
Labor Hired - Non-Dependents	19,602.14	210.10	1.01
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	847.37	9.08	0.04
Rent/Lease Other	5,835.68	62.55	0.30
Repairs and Maintenance	17,339.94	185.85	0.90
Building and Fence Repairs	1,370.89	14.69	0.07
Machinery Repairs	796.04	8.53	0.04
Seeds and Plants Purchased	4,321.31	46.32	0.22
Storage and Warehousing	11.24	0.12	0.00
Supplies Purchased	7,089.60	75.99	0.37
Taxes - Other	4,847.98	51.96	0.25
Taxes - Payroll	33.18	0.36	0.00
Utilities	6,894.86	73.90	0.36
Veterinary Fees and Medicine	6,206.18	66.52	0.32
Other Farm Expenses	7,428.19	79.62	0.38
Marketing & Hedging	8,132.16	87.16	0.42
Other Crop Expenses	484.86	5.20	0.03
Other Livestock Expenses	6,969.48	74.70	0.36
Selling Expense of Capital Items	0.00	0.00	0.00
Total Cash Expense	215,007.55	2,304.48	11.12
Non-Cash Expenses			
- Change in Prepaid Expenses	(4,172.15)	(44.72)	(0.22)
Change in Accounts Payable	62.44	0.67	0.00
Machinery, Equipment and Building Depreciation	27,706.51	296.96	1.43
Livestock Depreciation	1,883.67	20.19	0.10
Total Non-Cash Expenses	25,480.48	273.10	1.32
Total Expenses	240,488.03	2,577.58	12.44
Net Farm Income From Operations (NFIFO)	70,690.97	757.67	3.66
Gain (Loss) on Sale of All Farm Capital Assets	841.03	9.01	0.04
Net Farm Income (NFI)	71,532.00	766.69	3.70



Table 1-3, Part 1

The Average Cost of Production Report for 101 Great Lakes Graziers. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Income		<u>2004</u> per Farm	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
	Total Income	311,179.00	21.28	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	91.38	0.01	0.00
	Breeding Fees	3,208.89	0.22	0.17
	Car and Truck Expenses	800.65	0.05	0.04
	Chemicals	1,958.44	0.13	0.10
	Conservation Expenses	41.77	0.00	0.00
	Custom Heifer Raising Expenses	439.71	0.03	0.02
	Custom Hire (Machine Work)	8,729.40	0.60	0.45
	Feed Purchase	67,668.19	4.63	3.50
	Fertilizer and Lime	7,672.07	0.52	0.40
	Freight and Trucking	2,192.77	0.15	0.11
	Gasoline, Fuel, and Oil	7,113.18	0.49	0.37
	Farm Insurance	3,882.94	0.27	0.20
	Rent/Lease Equipment	847.37	0.06	0.04
	Rent/Lease Other	5,835.68	0.40	0.30
	Repairs and Maintenance	17,339.94	1.19	0.90
	Building and Fence Repairs	1,370.89	0.09	0.07
	Machinery Repairs	796.04	0.05	0.04
	Seeds and Plants Purchased	4,321.31	0.30	0.22
	Storage and Warehousing	11.24	0.00	0.00
	Supplies Purchased	7,089.60	0.48	0.37
	Taxes - Other	4,847.98	0.33	0.25
	Taxes - Payroll	33.18	0.00	0.00
	Utilities	6,894.86	0.47	0.36
	Veterinary Fees and Medicine	6,206.18	0.42	0.32
	Other Farm Expenses	7,428.19	0.51	0.38
	Marketing & Hedging	8,132.16	0.56	0.42
	Other Crop Expenses	484.86	0.03	0.03
	Other Livestock Expenses	6,969.48	0.48	0.36
	- Change in Prepaid Expenses	(4,172.15)	(0.29)	(0.22)
	Change in Accounts Payable	62.44	0.00	0.00
	Selling Expense of Capital Items	0.00	0.00	0.00
	Depreciation on Purchased Breeding Livestock	1,883.67	0.13	0.10
	Total Basic Cost	180,182.29	12.32	9.32



Table 1-3, Part 2

The Average Cost of Production Report for 101 Great Lakes Graziers. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

	<u>2004</u> per Farm	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
Interest Cost			
Mortgage Interest	9,445.78	0.65	0.49
Other Interest	2,270.60	0.16	0.12
Total Interest Cost	11,716.38	0.80	0.61
Labor Cost			
Employee Benefits - Dependents	27.93	0.00	0.00
Employee Benefits - Non-Dependents	177.72	0.01	0.01
Labor Hired - Dependents	1,075.05	0.07	0.06
Labor Hired - Non-Dependents	19,602.14	1.34	1.01
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	38,624.23	2.64	2.00
Total Labor Cost	59,507.07	4.07	3.08
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	27,706.51	1.89	1.43
Interest on Equity Capital	31,342.38	2.14	1.62
Total Depreciation & Equity Cost	59,048.90	4.04	3.06
Total Expenses	310,454.64	21.23	16.06
Total Income - Total Expenses	724.36	0.05	0.04
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	240,488.03	16.45	12.44
Net Farm Income From Operations (NFIFO)	70,690.97	4.83	3.66
Gain (Loss) on Sale of All Farm Capital Assets	841.03	0.06	0.04
Net Farm Income (NFI)	71,532.00	4.89	3.70



Table 1-4, Part 1

The Average AgFA© Financial Measures Report Showing Selected Measures of Financial Performance for 101 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	2004 per Farm	2004 per Cow	2004 per CWT EQ
Net Farm Income From Operations	\$70,690.97	\$757.67	\$3.66
Net Farm Income	\$71,532.00	\$766.69	\$3.70
Rate of Return on Assets (ROROA)	20.49%	20.49%	20.49%
Cost (Tax) Depreciation Claimed	\$29,590.19	\$317.15	\$1.53
Rate of Return on Equity	300.15 %	300.15 %	300.15 %
Net Profit Margin	14.34 %	14.34 %	14.34 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.418	1.418	1.418
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.579	0.579	0.579
	Wages Paid Ratio 0.067	0.067	0.067
	Interest Paid Ratio 0.038	0.038	0.038
	Depreciation Ratio 0.089	0.089	0.089
Net Farm Income from Operations Ratio	0.227	0.227	0.227
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$76,099.98	\$815.65	\$3.94
Coverage Margin	\$45,391.94	\$486.52	\$2.35
Term Debt Coverage Ratio	2.85	2.85	2.85
Liquidity			
Net Cash Income	\$79,115.14	\$847.97	\$4.09
Working Capital	\$38,266.17	\$410.14	\$1.98
Current Ratio	2.23	2.23	2.23
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$367,733.16	\$3,941.41	\$19.03
Beginning Total Farm Liabilities	\$198,154.84	\$2,123.85	\$10.25
Beginning Farm Net Worth	\$169,578.32	\$1,817.56	\$8.77
Farm Debt to Asset Ratio - Beginning of Year	0.595	0.595	0.595
Ending Total Farm Assets	\$410,522.53	\$4,400.03	\$21.24
Ending Total Farm Liabilities	\$218,711.27	\$2,344.17	\$11.32
Ending Farm Net Worth	\$191,811.27	\$2,055.85	\$9.92
Year Ending Farm Debt to Asset Ratio	0.533	0.533	0.533
Cost Basis Change in Farm Net Worth	\$22,232.95	\$238.30	\$1.15



Table 1-4, Part 2

The Average AgFA© Financial Measures Report Showing Selected Measures of Financial Performance for 101 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.

	2004	2004	2004
Profitability	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$85,649.54	\$918.00	\$4.43
Net Farm Income	\$86,490.57	\$927.02	\$4.47
Rate of Return on Assets (ROROA)	7.13 %	7.13 %	7.13 %
Economic Depreciation Claimed	\$14,623.70	\$156.74	\$0.76
Rate of Return on Equity	7.64 %	7.64 %	7.64 %
Net Profit Margin	19.15 %	19.15 %	19.15 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.373	0.373	0.373
Note: Some methods of calculating Basic Cost Ratio	0.578	0.578	0.578
ratios combine the Basic Cost and Wages Paid Ratio	0.067	0.067	0.067
Wages Paid Ratios into a single ratio (Operating Cost Ratio).	0.038	0.038	0.038
Interest Paid Ratio	0.042	0.042	0.042
Depreciation Ratio	0.275	0.275	0.275
Net Farm Income from Operations Ratio			
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$76,099.98	\$799.03	\$3.86
Coverage Margin	\$45,391.94	\$486.52	\$2.35
Term Debt Coverage Ratio	2.85	2.80	2.80
Liquidity			
Net Cash Income	\$79,115.14	\$847.97	\$4.09
Working Capital	\$38,266.17	\$410.14	\$1.98
Current Ratio	2.23	2.23	2.23
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$796,934.79	\$8,541.64	\$41.23
Beginning Total Farm Liabilities	\$198,154.84	\$2,123.85	\$10.25
Beginning Farm Net Worth	\$598,779.95	\$6,417.79	\$30.98
Farm Debt to Asset Ratio - Beginning of Year	0.249	0.249	0.249
Ending Total Farm Assets	\$873,595.03	\$9,363.29	\$45.20
Ending Total Farm Liabilities	\$218,711.27	\$2,344.17	\$11.32
Ending Farm Net Worth	\$654,883.76	\$7,019.12	\$33.88
Year Ending Farm Debt to Asset Ratio	0.250	0.250	0.250



Table 1-5

The Average AgFA© Balance Sheet of 101 Great Lakes Graziers in 2004 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	8,153	7,828		
Prepaid Expenses & Purchased Inventories	8,116	12,288		
Raised Feed Inventories	30,862	35,031		
Basis in Resale Livestock Purchased	206	87		
Accounts Receivable	9,105	11,422		
Market Livestock & Etc.	2,347	2,783		
Total Current Assets	58,789	69,438		
Non-Current Assets			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	164,299	175,168		
Purchased Breeding Livestock	696	1,380	1,279	1,616
Machinery & Equipment	118,458	129,326	25,132	27,553
Buildings	46,991	54,980	22,711	29,755
Land & House	306,845	334,101	71,796	81,058
Other Non-Current Assets	100,858	109,201	23,728	25,934
Total Non-Current Assets	738,146	804,157	144,645	165,916
Total Farm Assets	796,935	873,595		
Current Liabilities				
Accounts Payable	6,126	6,196		
Current Portion of Non-Current Liabilities	19,123	21,097		
Other Current Liabilities	4,811	3,879		
Total Current Liabilities	30,060	31,172		
Non-Current Liabilities				
Intermediate Liabilities	24,628	25,120		
Long-Term Liabilities	143,467	162,419		
Contingent Liabilities	168,613	183,723		
Total Non-Current Liabilities	336,708	371,262		
Total Farm Liabilities	366,767	402,434		
Non-Farm Assets	47,539	50,425		
Non-Farm Liabilities	2,071	1,671		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	1,867	1,933	66
Retained Earnings ¹	167,711	189,878	22,167
Valuation Adjustment	260,589	279,349	18,760
Total Farm Equities	430,167	471,161	40,993
Non-Farm Equities	45,468	48,754	3,286
Total Equities	475,635	519,914	44,279

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

XIII. Comparing the Top Half to the Bottom Half of Graziers Sorted by NFIFO per CWT EQ⁹

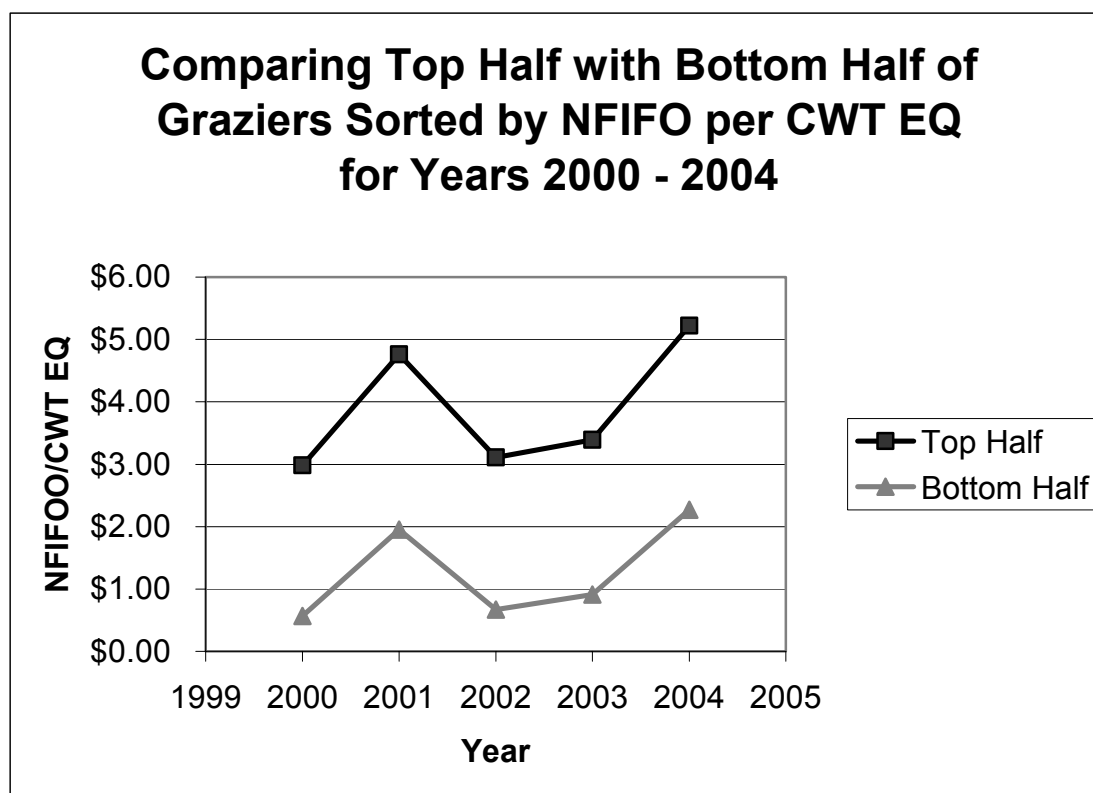
The average “top half” herd in 2004 was smaller, produced slightly less milk per cow, had lower basic, non-basic, allocated and total costs per CWT EQ, and had a little over two times as much NFIFO per CWT EQ and NFIFO per cow than the “bottom half” herds. For every basic cost item, the top half spent less per CWT EQ than the bottom group, except for depreciation of purchased livestock, fertilizer, and lime. *The cost categories in which the top group had their biggest advantage in 2004 were (in order of most to least \$/CWT EQ) paid labor and management (\$0.78), depreciation (\$0.31), feed purchased (\$0.28), other livestock expenses (\$0.28), custom hire (0.21), and interest (\$0.19).*

Overall, the top herds had a \$1.67 advantage in basic cost per CWT EQ and another \$1.28 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 \$0.19 per CWT EQ less for interest, \$0.78 per CWT EQ less for paid labor and management, and \$0.31 less per CWT EQ for depreciation. This accounts for the \$2.95 (\$5.22-\$2.27) advantage that the top herds had in NFIFO per CWT EQ.

If all labor and management was unpaid, the NFIFO per CWT EQ would increase to \$5.88 for the top half and to \$3.71 for the bottom half.

The year 2004 comparison of the top versus bottom half was more similar to the 2001 comparison, than to the other years. The top half had over four times as much NFIFO per CWT EQ and NFIFO per cow in 2003, 2002, and 2000 and about two and one-half times NFIFO per CWT EQ and per cow in 2004 and 2001. **The ratio between the most profitable half and the least profitable half’s NFIFO per CWT EQ and NFIFO per cow was greater in the lower profit years (usually with lower milk price) than in the higher profit years.**

Graph 2-1



⁹ CWT EQ sold is not the same as actual hundredweights of milk sold. See Chapter X for more information about 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 Most Performance Measures Selected from Tables 2-2 to 2-9										
	Top Half					Bottom Half				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Number of Herds	46	61	50	50	50	44	62	50	50	50
Number of Cows per Herd	78	80	75	77	89	104	91	97	98	99
Average Lbs. Milk per Cow	17,380	15,578	15,587	15,938	14,988	16,530	15,416	15,282	14,845	16,273
Average Lbs. Milk per Herd	1,361,892	1,244,299	1,167,013	1,221,182	1,326,548	1,718,782	1,407,833	1,488,501	1,460,414	1,617,693
Group Average Mailbox Milk Price	N/A	\$16.15	\$14.23	\$15.09	\$17.64	N/A	\$16.47	\$13.39	\$13.87	\$17.73
U.S. All Milk Price (used to calculate CWT EQ)*	12.33	\$14.94	\$12.15	\$12.50	\$16.10	\$12.33	\$14.94	\$12.15	\$12.50	\$16.10
Average Basic Cost per CWT EQ	\$6.96	\$7.82	\$6.76	\$6.84	\$8.44	\$8.56	\$9.22	\$8.44	\$8.70	\$10.11
Allocated Cost per CWT EQ	\$9.35	\$10.18	\$9.04	\$9.11	\$10.88	\$11.76	\$12.99	\$11.48	\$11.59	\$13.83
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.39	\$2.36	\$2.28	\$2.27	\$2.44	\$3.20	\$3.77	\$3.04	\$2.89	\$3.72
NFIFO per Cow (if all labor was unpaid)	\$869	\$1,101	\$971	\$1,023	\$1,199	\$356	\$676	\$409	\$410	\$780
NFIFO per CWT EQ (if all labor was unpaid)	\$3.77	\$5.49	\$3.99	\$4.18	\$5.88	\$1.64	\$3.45	\$1.95	\$2.02	\$3.71
NFIFO per Farm	\$53,876	\$76,462	\$56,608	\$63,470	\$94,036	\$12,790	\$34,907	\$13,590	\$18,249	\$47,517
NFIFO per Cow	\$687	\$962	\$756	\$828	\$1,062	\$123	\$382	\$140	\$186	\$478
NFIFO per CWT EQ	\$2.98	\$4.76	\$3.11	\$3.39	\$5.22	\$0.57	\$1.95	\$0.67	\$0.91	\$2.27

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

See tables 2-2 to 2-9 for more details about the average financial performance of the top and bottom half herds.



Table 2-2, Part 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	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	128.90	1.46	0.01
Basis in Resale Livestock Sold	(32.80)	(0.37)	(0.00)
Animal Product Sales	236,099.42	2,667.61	13.10
Raised Non-Breeding Livestock Sales	6,972.00	78.77	0.39
Crop Sales	1,140.60	12.89	0.06
Distributions Received from Cooperatives	619.38	7.00	0.03
Agricultural Program Payments	4,880.31	55.14	0.27
MILC Program Payments	285.36	3.22	0.02
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	1,760.95	19.90	0.10
Other Income, Incl. Tax Credits, Refunds	2,936.41	33.18	0.16
Sale of Purchased Breeding Livestock	147.76	1.67	0.01
Basis in Breeding Livestock Sold	(1,009.66)	(11.41)	(0.06)
Sale of Raised Breeding Livestock	15,576.91	176.00	0.86
Total Cash Income - Basis Adjustments	269,505.54	3,045.05	14.95
Non-Cash Income			
Change in Raised Crop Inventories	3,237.39	36.58	0.18
Change in Remaining Current Assets	3,312.46	37.43	0.18
Change in Raised Breeding Livestock	14,168.88	160.09	0.79
Total Non-Cash Income	20,718.73	234.09	1.15
Total Income	290,224.27	3,279.15	16.10



Table 2-2, Part 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	2004 per Farm	2004 per Cow	2004 per CWT EQ
Cash Expense			
Cost of Items for Resale	0.00	0.00	0.00
Breeding Fees	2,582.06	29.17	0.14
Car and Truck Expenses	780.04	8.81	0.04
Chemicals	1,337.13	15.11	0.07
Conservation Expenses	84.38	0.95	0.00
Custom Heifer Raising Expenses	252.06	2.85	0.01
Custom Hire (Machine Work)	6,156.44	69.56	0.34
Employee Benefits - Dependents	55.20	0.62	0.00
Employee Benefits - Non-Dependents	10.26	0.12	0.00
Feed Purchase	59,646.39	673.92	3.31
Fertilizer and Lime	8,657.63	97.82	0.48
Freight and Trucking	1,692.46	19.12	0.09
Gasoline, Fuel, and Oil	5,678.35	64.16	0.32
Farm Insurance	3,338.44	37.72	0.19
Mortgage Interest	6,981.78	78.88	0.39
Other Interest	2,129.51	24.06	0.12
Labor Hired - Dependents	1,347.58	15.23	0.07
Labor Hired - Non-Dependents	10,709.66	121.00	0.59
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	939.38	10.61	0.05
Rent/Lease Other	5,010.32	56.61	0.28
Repairs and Maintenance	14,401.23	162.71	0.80
Building and Fence Repairs	1,236.62	13.97	0.07
Machinery Repairs	748.18	8.45	0.04
Seeds and Plants Purchased	3,835.95	43.34	0.21
Storage and Warehousing	22.08	0.25	0.00
Supplies Purchased	6,365.25	71.92	0.35
Taxes - Other	4,409.52	49.82	0.24
Taxes - Payroll	67.03	0.76	0.00
Utilities	6,134.69	69.31	0.34
Veterinary Fees and Medicine	5,172.65	58.44	0.29
Other Farm Expenses	7,181.22	81.14	0.40
Marketing & Hedging	7,002.06	79.11	0.39
Other Crop Expenses	383.30	4.33	0.02
Other Livestock Expenses	3,721.51	42.05	0.21
Selling Expense of Capital Items	0.00	0.00	0.00
Total Cash Expense	178,070.36	2,011.96	9.88
Non-Cash Expenses			
- Change in Prepaid Expenses	(6,079.61)	(68.69)	(0.34)
Change in Accounts Payable	(615.49)	(6.95)	(0.03)
Machinery, Equipment and Building Depreciation	22,737.70	256.91	1.26
Livestock Depreciation	2,075.50	23.45	0.12
Total Non-Cash Expenses	18,118.10	204.71	1.01
Total Expenses	196,188.46	2,216.67	10.88
Net Farm Income From Operations (NFIFO)	94,035.80	1,062.48	5.22
Gain (Loss) on Sale of All Farm Capital Assets	509.78	5.76	0.03
Net Farm Income (NFI)	94,545.58	1,068.24	5.24



Table 2-3, Part 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		<u>2004</u> Cost (tax)	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
	Total Income	290,224.27	21.88	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	0.00	0.00	0.00
	Breeding Fees	2,582.06	0.19	0.14
	Car and Truck Expenses	780.04	0.06	0.04
	Chemicals	1,337.13	0.10	0.07
	Conservation Expenses	84.38	0.01	0.00
	Custom Heifer Raising Expenses	252.06	0.02	0.01
	Custom Hire (Machine Work)	6,156.44	0.46	0.34
	Feed Purchase	59,646.39	4.50	3.31
	Fertilizer and Lime	8,657.63	0.65	0.48
	Freight and Trucking	1,692.46	0.13	0.09
	Gasoline, Fuel, and Oil	5,678.35	0.43	0.32
	Farm Insurance	3,338.44	0.25	0.19
	Rent/Lease Equipment	939.38	0.07	0.05
	Rent/Lease Other	5,010.32	0.38	0.28
	Repairs and Maintenance	14,401.23	1.09	0.80
	Building and Fence Repairs	1,236.62	0.09	0.07
	Machinery Repairs	748.18	0.06	0.04
	Seeds and Plants Purchased	3,835.95	0.29	0.21
	Storage and Warehousing	22.08	0.00	0.00
	Supplies Purchased	6,365.25	0.48	0.35
	Taxes - Other	4,409.52	0.33	0.24
	Taxes - Payroll	67.03	0.01	0.00
	Utilities	6,134.69	0.46	0.34
	Veterinary Fees and Medicine	5,172.65	0.39	0.29
	Other Farm Expenses	7,181.22	0.54	0.40
	Marketing & Hedging	7,002.06	0.53	0.39
	Other Crop Expenses	383.30	0.03	0.02
	Other Livestock Expenses	3,721.51	0.28	0.21
	- Change in Prepaid Expenses	(6,079.61)	(0.46)	(0.34)
	Change in Accounts Payable	(615.49)	(0.05)	(0.03)
	Selling Expense of Capital Items	0.00	0.00	0.00
	Depreciation on Purchased Breeding Livestock	2,075.50	0.16	0.12
	Total Basic Cost	152,216.78	11.47	8.44



Table 2-3, Part 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.

	2004 per Farm	2004 per Cow	2004 per CWT EQ
Interest Cost			
Mortgage Interest	6,981.78	0.53	0.39
Other Interest	2,129.51	0.16	0.12
Total Interest Cost	9,111.29	0.69	0.51
Labor Cost			
Employee Benefits - Dependents	55.20	0.00	0.00
Employee Benefits - Non-Dependents	10.26	0.00	0.00
Labor Hired - Dependents	1,347.58	0.10	0.07
Labor Hired - Non-Dependents	10,709.66	0.81	0.59
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	37,729.56	2.84	2.09
Total Labor Cost	49,852.26	3.76	2.77
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	22,737.70	1.71	1.26
Interest on Equity Capital	28,238.04	2.13	1.57
Total Depreciation & Equity Cost	50,975.74	3.84	2.83
Total Expenses	262,156.06	19.76	14.54
Total Income - Total Expenses	28,068.20	2.12	1.56
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	196,188.46	14.79	10.88
Net Farm Income From Operations (NFIFO)	94,035.80	7.09	5.22
Gain (Loss) on Sale of All Farm Capital Assets	509.78	0.04	0.03
Net Farm Income (NFI)	94,545.58	7.13	5.24



Table 2-4, Part 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.**

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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$94,035.80	\$1,062.48	\$5.22
Net Farm Income	\$94,545.58	\$1,068.24	\$5.24
Rate of Return on Assets (ROROA)	34.67%	34.67%	34.67%
Cost (Tax) Depreciation Claimed	\$24,813.20	\$280.36	\$1.38
Rate of Return on Equity	221.26 %	221.26 %	221.26 %
Net Profit Margin	22.71 %	22.71 %	22.71 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.523	1.523	1.523
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.524	0.524	0.524
	Wages Paid Ratio 0.042	0.042	0.042
	Interest Paid Ratio 0.031	0.031	0.031
	Depreciation Ratio 0.078	0.078	0.078
Net Farm Income from Operations Ratio	0.324	0.324	0.324
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$86,937.64	\$982.28	\$4.82
Coverage Margin	\$63,557.15	\$718.11	\$3.53
Term Debt Coverage Ratio	3.98	3.98	3.98
Liquidity			
Net Cash Income	\$92,477.64	\$1,044.87	\$5.13
Working Capital	\$41,314.14	\$466.79	\$2.29
Current Ratio	2.84	2.84	2.84
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$339,529.12	\$3,836.23	\$18.84
Beginning Total Farm Liabilities	\$163,582.20	\$1,848.26	\$9.07
Beginning Farm Net Worth	\$175,946.91	\$1,987.97	\$9.76
Farm Debt to Asset Ratio - Beginning of Year	0.489	0.489	0.489
Ending Total Farm Assets	\$371,381.73	\$4,196.12	\$20.60
Ending Total Farm Liabilities	\$166,124.00	\$1,876.98	\$9.22
Ending Farm Net Worth	\$205,257.73	\$2,319.14	\$11.39
Year Ending Farm Debt to Asset Ratio	0.447	0.447	0.447
Cost Basis Change in Farm Net Worth	\$29,310.82	\$331.17	\$1.63



Table 2-4, Part 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$104,624.56	\$1,182.12	\$5.80
Net Farm Income	\$105,134.35	\$1,187.88	\$5.83
Rate of Return on Assets (ROROA)	10.49 %	10.49 %	10.49 %
Economic Depreciation Claimed	\$14,208.44	\$160.54	\$0.79
Rate of Return on Equity	11.94 %	11.94 %	11.94 %
Net Profit Margin	26.36 %	26.36 %	26.36 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.398	0.398	0.398
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.524	0.524	0.524
	Wages Paid Ratio 0.042	0.042	0.042
	Interest Paid Ratio 0.031	0.031	0.031
	Depreciation Ratio 0.042	0.042	0.042
Net Farm Income from Operations Ratio	0.360	0.360	0.360
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$86,937.64	\$960.35	\$4.72
Coverage Margin	\$63,557.15	\$718.11	\$3.53
Term Debt Coverage Ratio	3.98	3.90	3.90
Liquidity			
Net Cash Income	\$92,477.64	\$1,044.87	\$5.13
Working Capital	\$41,314.14	\$466.79	\$2.29
Current Ratio	2.84	2.84	2.84
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$694,355.83	\$7,845.30	\$38.52
Beginning Total Farm Liabilities	\$163,582.20	\$1,848.26	\$9.07
Beginning Farm Net Worth	\$530,773.62	\$5,997.04	\$29.44
Farm Debt to Asset Ratio - Beginning of Year	0.236	0.236	0.236
Ending Total Farm Assets	\$764,807.95	\$8,641.31	\$42.43
Ending Total Farm Liabilities	\$166,124.00	\$1,876.98	\$9.22
Ending Farm Net Worth	\$598,683.95	\$6,764.33	\$33.21
Year Ending Farm Debt to Asset Ratio	0.217	0.217	0.217



Table 2-5

The Average AgFA© Balance Sheet Report for the Top Half of Great Lakes Graziers in 2004
 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>	<u>Cost Basis</u>
Current Assets			
Cash Accounts	9,513	10,038	
Prepaid Expenses & Purchased Inventories	7,575	13,654	
Raised Feed Inventories	23,934	27,171	
Basis in Resale Livestock Purchased	33	0	
Accounts Receivable	7,178	10,165	
Market Livestock & Etc.	2,432	2,757	
Total Current Assets	50,665	63,786	
Non-Current Assets			
			<u>Beg.</u> <u>Dollars</u>
Raised Breeding Livestock	157,847	172,016	
Purchased Breeding Livestock	84	0	571
Machinery & Equipment	118,020	124,305	23,663
Buildings	43,037	45,257	20,789
Land & House	256,183	284,958	65,722
Other Non-Current Assets	68,519	74,486	20,272
Total Non-Current Assets	643,691	701,022	131,017
Total Farm Assets	694,356	764,808	
Current Liabilities			
Accounts Payable	3,384	2,784	
Current Portion of Non-Current Liabilities	14,998	16,796	
Other Current Liabilities	3,957	2,892	
Total Current Liabilities	22,338	22,472	
Non-Current Liabilities			
Intermediate Liabilities	33,623	30,983	
Long-Term Liabilities	107,621	112,669	
Contingent Liabilities	144,832	162,512	
Total Non-Current Liabilities	286,077	306,163	
Total Farm Liabilities	308,415	328,636	
Non-Farm Assets	42,251	42,516	
Non-Farm Liabilities	2,112	1,835	

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	520	520	0
Retained Earnings 1	175,427	204,738	29,311
Valuation Adjustment	209,994	230,915	20,920
Total Farm Equities	385,941	436,172	50,231
Non-Farm Equities	40,139	40,681	542
Total Equities	426,080	476,854	50,773

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



Table 2-6, Part 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	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	0.00	0.00	0.00
Basis in Resale Livestock Sold	(198.40)	(2.00)	(0.01)
Animal Product Sales	286,490.12	2,881.90	13.70
Raised Non-Breeding Livestock Sales	6,012.50	60.48	0.29
Crop Sales	2,500.06	25.15	0.12
Distributions Received from Cooperatives	217.17	2.18	0.01
Agricultural Program Payments	6,987.79	70.29	0.33
MILC Program Payments	519.35	5.22	0.02
Crop Insurance Proceeds and Certain Disaster Payments	15.40	0.15	0.00
Custom Hire (Machine Work) Income	1,074.96	10.81	0.05
Other Income, Incl. Tax Credits, Refunds	4,387.73	44.14	0.21
Basis in Breeding Livestock Sold	(243.88)	(2.45)	(0.01)
Sale of Raised Breeding Livestock	13,680.32	137.62	0.65
Total Cash Income - Basis Adjustments	321,443.12	3,233.51	15.37
Non-Cash Income			
Change in Raised Crop Inventories	5,195.41	52.26	0.25
Change in Remaining Current Assets	2,248.70	22.62	0.11
Change in Raised Breeding Livestock	7,728.93	77.75	0.37
Total Non-Cash Income	15,173.04	152.63	0.73
Total Income	336,616.16	3,386.14	16.10



Table 2-6, Part 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	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Expense			
Cost of Items for Resale	184.58	1.86	0.01
Breeding Fees	3,878.47	39.01	0.19
Car and Truck Expenses	826.84	8.32	0.04
Chemicals	2,575.22	25.91	0.12
Conservation Expenses	0.00	0.00	0.00
Custom Heifer Raising Expenses	636.16	6.40	0.03
Custom Hire (Machine Work)	11,476.94	115.45	0.55
Employee Benefits - Dependents	1.22	0.01	0.00
Employee Benefits - Non-Dependents	348.74	3.51	0.02
Feed Purchase	76,952.98	774.10	3.68
Fertilizer and Lime	6,839.95	68.81	0.33
Freight and Trucking	2,714.44	27.31	0.13
Gasoline, Fuel, and Oil	8,671.63	87.23	0.41
Farm Insurance	4,487.22	45.14	0.21
Mortgage Interest	12,098.70	121.71	0.58
Other Interest	2,457.10	24.72	0.12
Labor Hired - Dependents	824.02	8.29	0.04
Labor Hired - Non-Dependents	28,886.66	290.58	1.38
Rent/Lease Equipment	772.30	7.77	0.04
Rent/Lease Other	6,777.76	68.18	0.32
Repairs and Maintenance	20,564.98	206.87	0.98
Building and Fence Repairs	1,499.42	15.08	0.07
Machinery Repairs	859.82	8.65	0.04
Seeds and Plants Purchased	4,879.85	49.09	0.23
Storage and Warehousing	0.62	0.01	0.00
Supplies Purchased	7,919.08	79.66	0.38
Taxes - Other	5,347.86	53.80	0.26
Utilities	7,792.92	78.39	0.37
Veterinary Fees and Medicine	7,351.68	73.95	0.35
Other Farm Expenses	7,823.72	78.70	0.37
Marketing & Hedging	9,424.90	94.81	0.45
Other Crop Expenses	596.12	6.00	0.03
Other Livestock Expenses	10,341.51	104.03	0.49
Total Cash Expense	255,813.42	2,573.32	12.24
Non-Cash Expenses			
- Change in Prepaid Expenses	(2,347.22)	(23.61)	(0.11)
Change in Accounts Payable	741.62	7.46	0.04
Machinery, Equipment and Building Depreciation	33,161.68	333.58	1.59
Livestock Depreciation	1,729.52	17.40	0.08
Total Non-Cash Expenses	33,285.60	334.83	1.59
Total Expenses	289,099.02	2,908.15	13.83
Net Farm Income From Operations (NFIFO)	47,517.14	477.99	2.27
Gain (Loss) on Sale of All Farm Capital Assets	1,189.10	11.96	0.06
Net Farm Income (NFI)	48,706.24	489.95	2.33



Table 2-7, Part 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		<u>2004</u>	<u>2004</u>	<u>2004</u>
		<u>per Farm</u>	<u>per CWT Sold</u>	<u>per CWT EQ</u>
	Total Income	336,616.16	20.81	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	184.58	0.01	0.01
	Breeding Fees	3,878.47	0.24	0.19
	Car and Truck Expenses	826.84	0.05	0.04
	Chemicals	2,575.22	0.16	0.12
	Conservation Expenses	0.00	0.00	0.00
	Custom Heifer Raising Expenses	636.16	0.04	0.03
	Custom Hire (Machine Work)	11,476.94	0.71	0.55
	Feed Purchase	76,952.98	4.76	3.68
	Fertilizer and Lime	6,839.95	0.42	0.33
	Freight and Trucking	2,714.44	0.17	0.13
	Gasoline, Fuel, and Oil	8,671.63	0.54	0.41
	Farm Insurance	4,487.22	0.28	0.21
	Rent/Lease Equipment	772.30	0.05	0.04
	Rent/Lease Other	6,777.76	0.42	0.32
	Repairs and Maintenance	20,564.98	1.27	0.98
	Building and Fence Repairs	1,499.42	0.09	0.07
	Machinery Repairs	859.82	0.05	0.04
	Seeds and Plants Purchased	4,879.85	0.30	0.23
	Storage and Warehousing	0.62	0.00	0.00
	Supplies Purchased	7,919.08	0.49	0.38
	Taxes - Other	5,347.86	0.33	0.26
	Utilities	7,792.92	0.48	0.37
	Veterinary Fees and Medicine	7,351.68	0.45	0.35
	Other Farm Expenses	7,823.72	0.48	0.37
	Marketing & Hedging	9,424.90	0.58	0.45
	Other Crop Expenses	596.12	0.04	0.03
	Other Livestock Expenses	10,341.51	0.64	0.49
	- Change in Prepaid Expenses	(2,347.22)	(0.15)	(0.11)
	Change in Accounts Payable	741.62	0.05	0.04
	Depreciation on Purchased Breeding Livestock	1,729.52	0.11	0.08
	Total Basic Cost	211,320.90	13.06	10.11



Table 2-7, Part 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.

	<u>2004</u> per Farm	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
Interest Cost			
Mortgage Interest	12,098.70	0.75	0.58
Other Interest	2,457.10	0.15	0.12
Total Interest Cost	14,555.80	0.90	0.70
Labor Cost			
Employee Benefits - Dependents	1.22	0.00	0.00
Employee Benefits - Non-Dependents	348.74	0.02	0.02
Labor Hired - Dependents	824.02	0.05	0.04
Labor Hired - Non-Dependents	28,886.66	1.79	1.38
Value of Unpaid Labor & Management	39,791.38	2.46	1.90
Total Labor Cost	69,852.02	4.32	3.34
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	33,161.68	2.05	1.59
Interest on Equity Capital	34,595.79	2.14	1.65
Total Depreciation & Equity Cost	67,757.47	4.19	3.24
Total Expenses	363,486.19	22.47	17.39
Total Income - Total Expenses	(26,870.03)	(1.66)	(1.29)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	289,099.02	17.87	13.83
Net Farm Income From Operations (NFIFO)	47,517.14	2.94	2.27
Gain (Loss) on Sale of All Farm Capital Assets	1,189.10	0.07	0.06
Net Farm Income (NFI)	48,706.24	3.01	2.33



Table 2-8, Part 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$47,517.14	\$477.99	\$2.27
Net Farm Income	\$48,706.24	\$489.95	\$2.33
Rate of Return on Assets (ROROA)	9.57%	9.57%	9.57%
Cost (Tax) Depreciation Claimed	\$34,891.20	\$350.98	\$1.67
Rate of Return on Equity	N/A	N/A	N/A
Net Profit Margin	6.97 %	6.97 %	6.97 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.341	1.341	1.341
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.628	0.628	0.628
	Wages Paid Ratio 0.089	0.089	0.089
	Interest Paid Ratio 0.043	0.043	0.043
	Depreciation Ratio 0.099	0.099	0.099
Net Farm Income from Operations Ratio	0.141	0.141	0.141
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$66,661.70	\$670.57	\$3.19
Coverage Margin	\$28,011.96	\$281.78	\$1.34
Term Debt Coverage Ratio	2.13	2.13	2.13
Liquidity			
Net Cash Income	\$66,071.98	\$664.64	\$3.16
Working Capital	\$35,659.73	\$358.71	\$1.71
Current Ratio	1.88	1.88	1.88
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$400,862.66	\$4,032.42	\$19.17
Beginning Total Farm Liabilities	\$236,690.58	\$2,380.95	\$11.32
Beginning Farm Net Worth	\$164,172.08	\$1,651.46	\$7.85
Farm Debt to Asset Ratio - Beginning of Year	0.688	0.688	0.688
Ending Total Farm Assets	\$455,389.74	\$4,580.92	\$21.78
Ending Total Farm Liabilities	\$275,672.76	\$2,773.09	\$13.19
Ending Farm Net Worth	\$179,716.98	\$1,807.84	\$8.60
Year Ending Farm Debt to Asset Ratio	0.605	0.605	0.605



Table 2-8, Part 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$67,180.28	\$675.79	\$3.21
Net Farm Income	\$68,369.38	\$687.75	\$3.27
Rate of Return on Assets (ROROA)	4.55 %	4.55 %	4.55 %
Economic Depreciation Claimed	\$15,228.06	\$153.18	\$0.73
Rate of Return on Equity	4.13 %	4.13 %	4.13 %
Net Profit Margin	12.81 %	12.81 %	12.81 %

Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)

	Asset Turnover Ratio	0.355	0.355	0.355
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio	0.626	0.626	0.626
	Wages Paid Ratio	0.089	0.089	0.089
	Interest Paid Ratio	0.043	0.043	0.043
	Depreciation Ratio	0.042	0.042	0.042

Net Farm Income from Operations Ratio	0.200	0.200	0.200
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Repayment Capacity

Capital Replacement & Debt Repayment Capacity	\$66,661.70	\$658.59	\$3.13
Coverage Margin	\$28,011.96	\$281.78	\$1.34
Term Debt Coverage Ratio	2.13	2.10	2.10

Liquidity

Net Cash Income	\$66,071.98	\$664.64	\$3.16
Working Capital	\$35,659.73	\$358.71	\$1.71
Current Ratio	1.88	1.88	1.88

Solvency (Assets at Market Value)

Beginning Total Farm Assets	\$905,906.34	\$9,112.83	\$43.33
Beginning Total Farm Liabilities	\$236,690.58	\$2,380.95	\$11.32
Beginning Farm Net Worth	\$669,215.76	\$6,731.88	\$32.01
Farm Debt to Asset Ratio - Beginning of Year	0.261	0.261	0.261
Ending Total Farm Assets	\$990,288.63	\$9,961.66	\$47.36
Ending Total Farm Liabilities	\$275,672.76	\$2,773.09	\$13.19
Ending Farm Net Worth	\$714,615.87	\$7,188.57	\$34.18
Year Ending Farm Debt to Asset Ratio	0.278	0.278	0.278
Total Change in Farm Net Worth	\$45,400.12	\$456.70	\$2.17



Table 2-9

The Average AgFA® Balance Sheet Report for the Bottom Half of Great Lakes Graziers
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. Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	6,800	5,618		
Prepaid Expenses & Purchased Inventories	8,807	11,154		
Raised Feed Inventories	38,242	43,437		
Basis in Resale Livestock Purchased	383	175		
Accounts Receivable	11,213	12,907		
Market Livestock & Etc.	2,309	2,864		
Total Current Assets	67,754	76,155		
Non-Current Assets				
Raised Breeding Livestock	173,257	180,986	<u>Beg.</u>	<u>End Dollars</u>
Purchased Breeding Livestock	1,322	2,788	<u>Dollars</u>	
Machinery & Equipment	120,744	136,398	2,013	2,941
Buildings	51,226	65,188	27,068	30,643
Land & House	356,389	382,672	24,806	37,675
Other Non-Current Assets	135,214	146,101	78,305	95,605
Total Non-Current Assets	838,152	914,133	27,659	31,384
Total Farm Assets	905,906	990,289	159,851	198,248
Current Liabilities				
Accounts Payable	8,990	9,732		
Current Portion of Non-Current Liabilities	23,631	25,821		
Other Current Liabilities	5,761	4,943		
Total Current Liabilities	38,382	40,496		
Non-Current Liabilities				
Intermediate Liabilities	16,125	19,760		
Long-Term Liabilities	182,183	215,417		
Contingent Liabilities	193,685	206,527		
Total Non-Current Liabilities	391,993	441,704		
Total Farm Liabilities	430,375	482,199		
Non-Farm Assets	53,298	58,862		
Non-Farm Liabilities	2,072	1,541		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	3,251	3,385	134
Retained Earnings ¹	160,921	176,332	15,411
Valuation Adjustment	311,359	328,372	17,013
Total Farm Equities	475,531	508,089	32,558
Non-Farm Equities	51,226	57,321	6,095
Total Equities	526,757	565,411	38,653

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

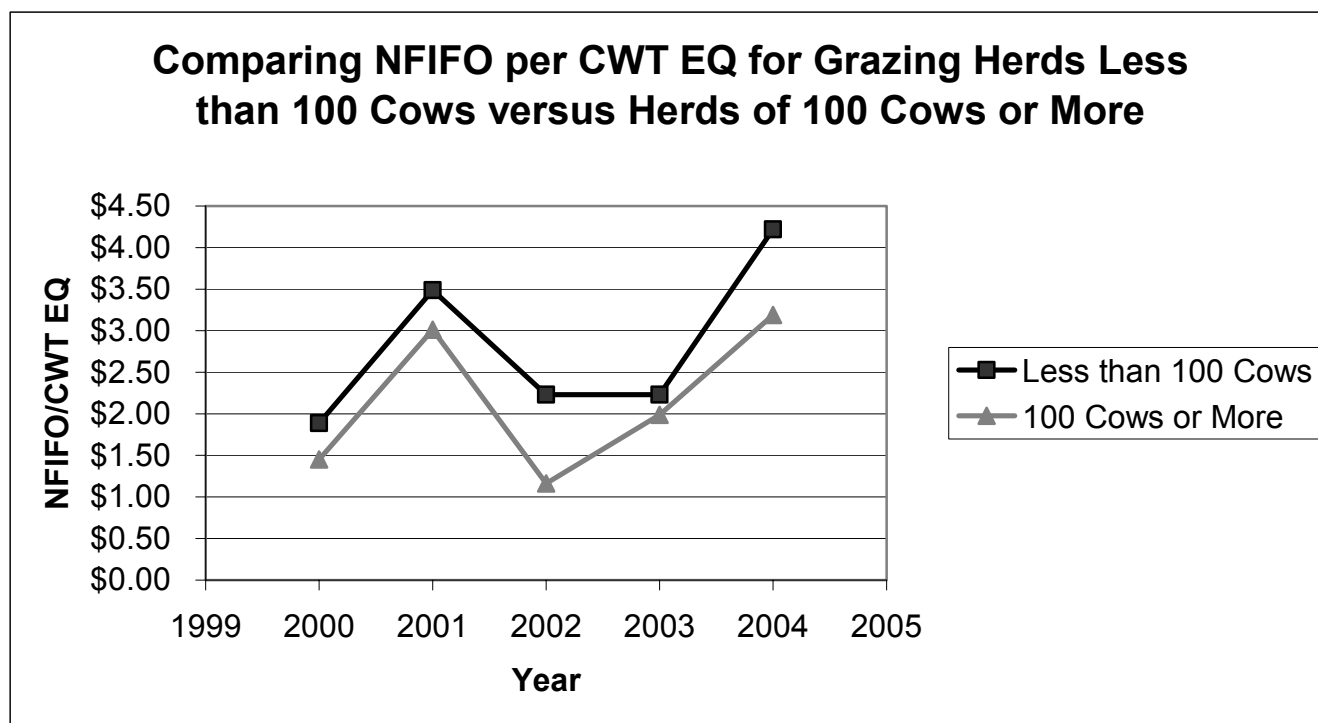
The average “large” herd in 2004 had over three times as many cows, produced about ten percent less milk per cow, and was less profitable on a per cow and a per CWT EQ basis. The average “large” farm produced more total dollars of NFIFO per farm. For about half of the basic cost items, the larger herds spent more per CWT EQ than the smaller herds.

Overall, the smaller herds had an \$0.11 advantage in basic cost per CWT EQ and a \$0.92 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 \$0.01 per CWT EQ less for interest, \$0.88 per CWT EQ less for paid labor and management, and \$0.03 less per CWT EQ for depreciation than the large herds.

This accounts for the \$1.03 (\$4.22-\$3.19) overall advantage that the smaller herds had in NFIFO per CWT EQ.

The larger herds cost of paid labor, which is \$0.88 per CWT EQ higher, provides the smaller herds most of their advantage in NFIFO per CWT EQ. If all labor expenses were unpaid, the smaller herd size would still have a higher NFIFO per cow in three years and a higher NFIFO per CWT EQ in two years.

Graph 3-1



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										
Less than 100 Cows						100 Cows or More				
Most Performance Measures Selected from										
Tables 3-2 to 3-9	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Number of Herds	68	96	75	77	73	24	30	28	25	28
Number of Cows per Herd	59	57	57	57	56	176	173	164	180	190
Average Lbs. Milk per Cow	16,900	16,145	16,418	16,081	16,337	16,744	14,671	14,318	14,691	15,156
Average Lbs. Milk per Herd	1,000,211	917,335	936,493	924,568	919,975	2,959,249	2,538,523	2,341,760	2,638,474	2,875,625
Group Average Mailbox Milk Price	NA	\$16.11	\$13.44	\$14.22	\$17.61	NA	\$16.54	\$14.04	\$14.58	\$17.74
U.S. All Milk Price (used to calculate CWT EQ)*	12.33	\$14.94	\$12.15	\$12.50	\$16.10	\$12.33	\$14.94	\$12.15	\$12.50	\$16.10
Average Basic Cost per CWT EQ	\$7.90	\$8.72	\$7.63	\$7.91	\$9.26	\$7.77	\$8.41	\$7.86	\$7.66	\$9.37
Allocated Cost per CWT EQ	\$10.44	\$11.45	\$9.92	\$10.27	\$11.88	\$10.88	\$11.93	\$10.99	\$10.51	\$12.91
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.54	\$2.73	\$2.29	\$2.36	\$2.62	\$3.11	\$3.52	\$3.13	\$2.85	\$3.54
NFIFO per Cow (if all labor was unpaid)	\$553	\$869	\$683	\$648	\$1,038	\$601	\$864	\$560	\$689	\$938
NFIFO per CWT EQ (if all labor was unpaid)	\$2.55	\$4.26	\$2.96	\$2.83	\$4.77	\$2.65	\$4.51	\$2.65	\$3.33	\$4.67
NFIFO per Farm	\$24,256	\$40,057	\$29,465	\$29,335	\$51,195	\$58,150	\$99,837	\$40,095	\$74,215	\$121,520
NFIFO per Cow	\$428	\$705	\$516	\$510	\$909	\$365	\$557	\$245	\$413	\$640
NFIFO per CWT EQ	\$1.89	\$3.49	\$2.23	\$2.23	\$4.22	\$1.45	\$3.01	\$1.16	\$1.99	\$3.19

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

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 100 cows or more.



Table 3-2, Part 1

The Average AgFA© Farm Earnings Report for the 73 Great Lakes Graziers with Less than 100 Cows

Income	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	88.29	1.57	0.01
Basis in Resale Livestock Sold	(22.47)	(0.40)	(0.00)
Animal Product Sales	161,877.43	2,874.64	13.34
Raised Non-Breeding Livestock Sales	4,726.40	83.93	0.39
Crop Sales	1,665.67	29.58	0.14
Distributions Received from Cooperatives	416.99	7.40	0.03
Agricultural Program Payments	3,663.89	65.06	0.30
MILC Program Payments	158.15	2.81	0.01
Crop Insurance Proceeds and Certain Disaster Payments	10.55	0.19	0.00
Custom Hire (Machine Work) Income	1,217.84	21.63	0.10
Other Income, Incl. Tax Credits, Refunds	2,998.14	53.24	0.25
Sale of Purchased Breeding Livestock	101.21	1.80	0.01
Basis in Breeding Livestock Sold	(264.75)	(4.70)	(0.02)
Sale of Raised Breeding Livestock	9,426.65	167.40	0.78
Total Cash Income - Basis Adjustments	186,063.98	3,304.14	15.34
Non-Cash Income			
Change in Raised Crop Inventories	2,364.69	41.99	0.19
Change in Remaining Current Assets	1,025.96	18.22	0.08
Change in Raised Breeding Livestock	5,864.29	104.14	0.48
Total Non-Cash Income	9,254.94	164.35	0.76
Total Income	195,318.92	3,468.49	16.10



Table 3-2, Part 2

The Average AgFA© Farm Earnings Report for the 73 Great Lakes Graziers with Less than 100 Cows

Expenses	2004 per Farm	2004 per Cow	2004 per CWT EQ
Cash Expense			
Cost of Items for Resale	22.73	0.40	0.00
Breeding Fees	2,465.37	43.78	0.20
Car and Truck Expenses	845.24	15.01	0.07
Chemicals	1,104.07	19.61	0.09
Conservation Expenses	57.79	1.03	0.00
Custom Heifer Raising Expenses	214.25	3.80	0.02
Custom Hire (Machine Work)	4,623.38	82.10	0.38
Employee Benefits - Dependents	38.64	0.69	0.00
Employee Benefits - Non-Dependents	191.26	3.40	0.02
Feed Purchase	41,542.44	737.71	3.42
Fertilizer and Lime	3,857.10	68.49	0.32
Freight and Trucking	2,118.28	37.62	0.17
Gasoline, Fuel, and Oil	4,371.95	77.64	0.36
Farm Insurance	2,952.56	52.43	0.24
Mortgage Interest	5,864.47	104.14	0.48
Other Interest	1,381.62	24.53	0.11
Labor Hired - Dependents	564.40	10.02	0.05
Labor Hired - Non-Dependents	6,443.03	114.42	0.53
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	757.55	13.45	0.06
Rent/Lease Other	2,355.05	41.82	0.19
Repairs and Maintenance	9,830.42	174.57	0.81
Building and Fence Repairs	1,325.17	23.53	0.11
Machinery Repairs	934.56	16.60	0.08
Seeds and Plants Purchased	2,437.52	43.29	0.20
Storage and Warehousing	13.59	0.24	0.00
Supplies Purchased	4,702.61	83.51	0.39
Taxes - Other	3,307.98	58.74	0.27
Taxes - Payroll	0.00	0.00	0.00
Utilities	4,794.30	85.14	0.40
Veterinary Fees and Medicine	3,892.39	69.12	0.32
Other Farm Expenses	3,371.21	59.87	0.28
Marketing & Hedging	4,875.63	86.58	0.40
Other Crop Expenses	596.95	10.60	0.05
Other Livestock Expenses	4,093.23	72.69	0.34
Total Cash Expense	125,946.71	2,236.57	10.38
Non-Cash Expenses			
- Change in Prepaid Expenses	(1,951.62)	(34.66)	(0.16)
Change in Accounts Payable	529.23	9.40	0.04
Machinery, Equipment and Building Depreciation	17,300.56	307.23	1.43
Livestock Depreciation	2,299.00	40.83	0.19
Total Non-Cash Expenses	18,177.18	322.79	1.50
Total Expenses	144,123.89	2,559.37	11.88
Net Farm Income From Operations (NFIFO)	51,195.03	909.13	4.22
Gain (Loss) on Sale of All Farm Capital Assets	853.96	15.16	0.07
Net Farm Income (NFI)	52,048.99	924.29	4.29



Table 3-3 Part 1

The Average Cost of Production Report for the 73 Great Lakes Graziers. This report shows Basic Costs, Allocated Costs, Total Costs, FIFO and Other Financial Details.

Income		<u>2004</u> per Farm	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
Total Income		195,318.92	21.23	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	22.73	0.00	0.00
	Breeding Fees	2,465.37	0.27	0.20
	Car and Truck Expenses	845.24	0.09	0.07
	Chemicals	1,104.07	0.12	0.09
	Conservation Expenses	57.79	0.01	0.00
	Custom Heifer Raising Expenses	214.25	0.02	0.02
	Custom Hire (Machine Work)	4,623.38	0.50	0.38
	Feed Purchase	41,542.44	4.52	3.42
	Fertilizer and Lime	3,857.10	0.42	0.32
	Freight and Trucking	2,118.28	0.23	0.17
	Gasoline, Fuel, and Oil	4,371.95	0.48	0.36
	Farm Insurance	2,952.56	0.32	0.24
	Rent/Lease Equipment	757.55	0.08	0.06
	Rent/Lease Other	2,355.05	0.26	0.19
	Repairs and Maintenance	9,830.42	1.07	0.81
	Building and Fence Repairs	1,325.17	0.14	0.11
	Machinery Repairs	934.56	0.10	0.08
	Seeds and Plants Purchased	2,437.52	0.26	0.20
	Storage and Warehousing	13.59	0.00	0.00
	Supplies Purchased	4,702.61	0.51	0.39
	Taxes - Other	3,307.98	0.36	0.27
	Taxes - Payroll	0.00	0.00	0.00
	Utilities	4,794.30	0.52	0.40
	Veterinary Fees and Medicine	3,892.39	0.42	0.32
	Other Farm Expenses	3,371.21	0.37	0.28
	Marketing & Hedging	4,875.63	0.53	0.40
	Other Crop Expenses	596.95	0.06	0.05
	Other Livestock Expenses	4,093.23	0.44	0.34
	- Change in Prepaid Expenses	(1,951.62)	(0.21)	(0.16)
	Change in Accounts Payable	529.23	0.06	0.04
	Depreciation on Purchased Breeding Livestock	2,299.00	0.25	0.19
	Total Basic Cost	112,339.92	12.21	9.26



Table 3-3, Part 2

The Average Cost of Production Report for the 73 Great Lakes Graziers with Less than 100 Cows. This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

	<u>2004</u>	<u>2004</u>	<u>2004</u>
Interest Cost	Cost (tax)	per CWT Sold	per CWT EQ
Mortgage Interest	5,864.47	0.64	0.48
Other Interest	1,381.62	0.15	0.11
Total Interest Cost	7,246.08	0.79	0.60
Labor Cost			
Employee Benefits - Dependents	38.64	0.00	0.00
Employee Benefits - Non-Dependents	191.26	0.02	0.02
Labor Hired - Dependents	564.40	0.06	0.05
Labor Hired - Non-Dependents	6,443.03	0.70	0.53
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	34,855.34	3.79	2.87
Total Labor Cost	42,092.67	4.58	3.47
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	17,300.56	1.88	1.43
Interest on Equity Capital	23,165.42	2.52	1.91
Total Depreciation & Equity Cost	40,465.97	4.40	3.34
Total Expenses	202,144.65	21.97	16.66
Total Income - Total Expenses	(6,825.72)	(0.74)	(0.56)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	144,123.89	15.67	11.88
Net Farm Income From Operations (NFIFO)	51,195.03	5.56	4.22
Gain (Loss) on Sale of All Farm Capital Assets	853.96	0.09	0.07
Net Farm Income (NFI)	52,048.99	5.66	4.29



Table 3-4, Part 1

The Average AgFA© Financial Measures Report for the 73 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$51,195.03	\$909.13	\$4.22
Net Farm Income	\$52,048.99	\$924.29	\$4.29
Rate of Return on Assets (ROROA)	16.20%	16.20%	16.20%
Cost (Tax) Depreciation Claimed	\$19,599.56	\$348.05	\$1.62
Rate of Return on Equity	84.76 %	84.76 %	84.76 %
Net Profit Margin	12.51 %	12.51 %	12.51 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.270	1.270	1.270
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio 0.575	0.575	0.575
	Wages Paid Ratio 0.037	0.037	0.037
	Interest Paid Ratio 0.037	0.037	0.037
	Depreciation Ratio 0.089	0.089	0.089
Net Farm Income from Operations Ratio	0.262	0.262	0.262
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$51,262.72	\$910.33	\$4.23
Coverage Margin	\$30,785.75	\$546.70	\$2.54
Term Debt Coverage Ratio	2.82	2.82	2.82
Liquidity			
Net Cash Income	\$60,404.49	\$1,072.67	\$4.98
Working Capital	\$18,611.20	\$330.50	\$1.53
Current Ratio	1.85	1.85	1.85
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$250,960.37	\$4,456.58	\$20.69
Beginning Total Farm Liabilities	\$133,637.18	\$2,373.14	\$11.02
Beginning Farm Net Worth	\$117,323.20	\$2,083.44	\$9.67
Farm Debt to Asset Ratio - Beginning of Year	0.531	0.531	0.531
Ending Total Farm Assets	\$267,742.56	\$4,754.60	\$22.07
Ending Total Farm Liabilities	\$133,317.04	\$2,367.46	\$10.99
Ending Farm Net Worth	\$134,425.52	\$2,387.14	\$11.08
Year Ending Farm Debt to Asset Ratio	0.498	0.498	0.498
Cost Basis Change in Farm Net Worth	\$17,102.32	\$303.70	\$1.41



Table 3-4, Part 2

The Average AgFA© Financial Measures Report for the 73 Great Lakes Graziers with less than 100 Cows.

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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$61,252.75	\$1,087.73	\$5.05
Net Farm Income	\$62,106.71	\$1,102.90	\$5.12
Rate of Return on Assets (ROROA)	5.78 %	5.78 %	5.78 %
Economic Depreciation Claimed	\$9,530.88	\$169.25	\$0.79
Rate of Return on Equity	5.88 %	5.88%	5.88 %
Net Profit Margin	17.66 %	17.66%	17.66 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.327	0.327	0.327
Note: Some methods of calculating Basic Cost Ratio	0.573	0.573	0.573
ratios combine the Basic Cost and Wages Paid Ratio	0.037	0.037	0.037
Wages Paid Ratios into a single Interest Paid Ratio	0.037	0.037	0.037
ratio (Operating Cost Ratio). Depreciation Ratio	0.039	0.039	0.039
Net Farm Income from Operations Ratio	0.314	0.314	0.314
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$51,262.72	\$910.33	\$4.08
Coverage Margin	\$30,785.75	\$546.70	\$2.54
Term Debt Coverage Ratio	2.82	2.73	2.73
Liquidity			
Net Cash Income	\$60,404.49	\$1,072.67	\$4.98
Working Capital	\$18,611.20	\$330.50	\$1.53
Current Ratio	1.85	1.85	1.85
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$580,722.73	\$10,312.53	\$47.87
Beginning Total Farm Liabilities	\$133,637.18	\$2,373.14	\$11.02
Beginning Farm Net Worth	\$447,085.55	\$7,939.39	\$36.85
Farm Debt to Asset Ratio - Beginning of Year	0.230	0.230	0.230
Ending Total Farm Assets	\$612,804.26	\$10,882.24	\$50.51
Ending Total Farm Liabilities	\$133,317.04	\$2,367.46	\$10.99
Ending Farm Net Worth	\$479,487.21	\$8,514.78	\$39.52
Year Ending Farm Debt to Asset Ratio	0.218	0.218	0.218
Total Change in Farm Net Worth	\$32,401.66	\$575.39	\$2.67



Table 3-5

The Average AgFA© Balance Sheet for the 73 Great Lakes Graziers in 2004 with less than 100 Cows, Showing Current Market Values and Historic Cost Values in Assets.

	<u>Beg. Dollars</u>	<u>End Dollars</u>	<u>Cost Basis</u>	
Current Assets				
Cash Accounts	5,666	5,336		
Prepaid Expenses & Purchased Inventories	4,839	6,791		
Raised Feed Inventories	19,146	21,511		
Basis in Resale Livestock Purchased	22	0		
Accounts Receivable	4,711	5,529		
Market Livestock & Etc.	1,216	1,424		
Total Current Assets	35,601	40,591		
Non-Current Assets				
			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	102,670	108,535		
Purchased Breeding Livestock	803	1,745	1,419	1,888
Machinery & Equipment	88,671	93,541	21,084	21,828
Buildings	41,601	44,919	21,837	24,718
Land & House	199,304	204,478	45,000	45,893
Other Non-Current Assets	112,072	118,997	23,349	24,290
Total Non-Current Assets	545,122	572,213	112,689	118,617
Total Farm Assets	580,723	612,804		
Current Liabilities				
Accounts Payable	2,391	2,931		
Current Portion of Non-Current Liabilities	13,490	13,880		
Other Current Liabilities	4,309	5,168		
Total Current Liabilities	20,190	21,980		
Non-Current Liabilities				
Intermediate Liabilities	18,216	16,481		
Long-Term Liabilities	95,231	94,857		
Contingent Liabilities	120,588	127,769		
Total Non-Current Liabilities	234,035	239,106		
Total Farm Liabilities	254,225	261,086		
Non-Farm Assets	52,031	55,728		
Non-Farm Liabilities	1,954	1,525		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	1,405	1,497	92
Retained Earnings ¹	115,918	132,929	17,011
Valuation Adjustment	209,175	217,293	8,118
Total Farm Equities	326,498	351,719	25,220
Non-Farm Equities	50,077	54,203	4,126
Total Equities	376,575	405,921	29,346

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



Table 3-6 Part 1

The Average AgFA© Farm Earnings Report for the 28 Great Lakes Graziers with 100 or More Cows

Income	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	0.00	0.00	0.00
Basis in Resale Livestock Sold	(354.29)	(1.87)	(0.01)
Animal Product Sales	513,895.87	2,708.53	13.49
Raised Non-Breeding Livestock Sales	10,991.11	57.93	0.29
Crop Sales	2,158.54	11.38	0.06
Distributions Received from Cooperatives	430.27	2.27	0.01
Agricultural Program Payments	11,640.75	61.35	0.31
MILC Program Payments	1,024.65	5.40	0.03
Crop Insurance Proceeds and Certain Disaster Payments	0.00	0.00	0.00
Custom Hire (Machine Work) Income	1,889.05	9.96	0.05
Other Income, Incl. Tax Credits, Refunds	5,289.74	27.88	0.14
Sale of Purchased Breeding Livestock	0.00	0.00	0.00
Basis in Breeding Livestock Sold	(1,548.21)	(8.16)	(0.04)
Sale of Raised Breeding Livestock	27,778.41	146.41	0.73
Total Cash Income - Basis Adjustments	573,195.89	3,021.08	15.05
Non-Cash Income			
Change in Raised Crop Inventories	8,873.31	46.77	0.23
Change in Remaining Current Assets	7,255.82	38.24	0.19
Change in Raised Breeding Livestock	23,917.75	126.06	0.63
Total Non-Cash Income	40,046.88	211.07	1.05
Total Income	613,242.77	3,232.15	16.10



Table 3-6 Part 2

The Average AgFA© Farm Earnings Report for the 28 Great Lakes Graziers with 100 or More Cows

Expenses	2004 per Farm	2004 per Cow	2004 per CWT EQ
Cash Expense			
Cost of Items for Resale	270.36	1.42	0.01
Breeding Fees	5,147.35	27.13	0.14
Car and Truck Expenses	684.39	3.61	0.02
Chemicals	4,185.88	22.06	0.11
Conservation Expenses	0.00	0.00	0.00
Custom Heifer Raising Expenses	1,027.54	5.42	0.03
Custom Hire (Machine Work)	19,434.36	102.43	0.51
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	142.43	0.75	0.00
Feed Purchase	135,781.76	715.65	3.56
Fertilizer and Lime	17,618.26	92.86	0.46
Freight and Trucking	2,387.00	12.58	0.06
Gasoline, Fuel, and Oil	14,259.96	75.16	0.37
Farm Insurance	6,308.57	33.25	0.17
Mortgage Interest	18,782.79	99.00	0.49
Other Interest	4,588.30	24.18	0.12
Labor Hired - Dependents	2,406.39	12.68	0.06
Labor Hired - Non-Dependents	53,909.82	284.14	1.42
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Rent/Lease Equipment	1,081.54	5.70	0.03
Rent/Lease Other	14,910.18	78.59	0.39
Repairs and Maintenance	36,918.34	194.58	0.97
Building and Fence Repairs	1,490.07	7.85	0.04
Machinery Repairs	434.89	2.29	0.01
Seeds and Plants Purchased	9,232.62	48.66	0.24
Storage and Warehousing	5.11	0.03	0.00
Supplies Purchased	13,312.80	70.17	0.35
Taxes - Other	8,862.97	46.71	0.23
Taxes - Payroll	119.70	0.63	0.00
Utilities	12,371.30	65.20	0.32
Veterinary Fees and Medicine	12,238.58	64.50	0.32
Other Farm Expenses	18,005.32	94.90	0.47
Marketing & Hedging	16,622.39	87.61	0.44
Other Crop Expenses	192.64	1.02	0.01
Other Livestock Expenses	14,468.27	76.26	0.38
Selling Expense of Capital Items	0.00	0.00	0.00
Total Cash Expense	447,201.89	2,357.02	11.74
Non-Cash Expenses			
- Change in Prepaid Expenses	(9,961.41)	(52.50)	(0.26)
Change in Accounts Payable	(1,154.55)	(6.09)	(0.03)
Machinery, Equipment and Building Depreciation	54,836.32	289.02	1.44
Livestock Depreciation	800.86	4.22	0.02
Total Non-Cash Expenses	44,521.22	234.65	1.17
Total Expenses	491,723.11	2,591.67	12.91
Net Farm Income From Operations (NFIFO)	121,519.66	640.48	3.19
Gain (Loss) on Sale of All Farm Capital Assets	807.32	4.26	0.02
Net Farm Income (NFI)	122,326.98	644.74	3.21



Table 3-7, Part 1

The Average Cost of Production Report for the 28 Great Lakes Graziers with 100 or more Cows.
This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Income		<u>2004</u> per Farm	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
	Total Income	613,242.77	21.33	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	270.36	0.01	0.01
	Breeding Fees	5,147.35	0.18	0.14
	Car and Truck Expenses	684.39	0.02	0.02
	Chemicals	4,185.88	0.15	0.11
	Conservation Expenses	0.00	0.00	0.00
	Custom Heifer Raising Expenses	1,027.54	0.04	0.03
	Custom Hire (Machine Work)	19,434.36	0.68	0.51
	Feed Purchase	135,781.76	4.72	3.56
	Fertilizer and Lime	17,618.26	0.61	0.46
	Freight and Trucking	2,387.00	0.08	0.06
	Gasoline, Fuel, and Oil	14,259.96	0.50	0.37
	Farm Insurance	6,308.57	0.22	0.17
	Rent/Lease Equipment	1,081.54	0.04	0.03
	Rent/Lease Other	14,910.18	0.52	0.39
	Repairs and Maintenance	36,918.34	1.28	0.97
	Building and Fence Repairs	1,490.07	0.05	0.04
	Machinery Repairs	434.89	0.02	0.01
	Seeds and Plants Purchased	9,232.62	0.32	0.24
	Storage and Warehousing	5.11	0.00	0.00
	Supplies Purchased	13,312.80	0.46	0.35
	Taxes - Other	8,862.97	0.31	0.23
	Taxes - Payroll	119.70	0.00	0.00
	Utilities	12,371.30	0.43	0.32
	Veterinary Fees and Medicine	12,238.58	0.43	0.32
	Other Farm Expenses	18,005.32	0.63	0.47
	Marketing & Hedging	16,622.39	0.58	0.44
	Other Crop Expenses	192.64	0.01	0.01
	Other Livestock Expenses	14,468.27	0.50	0.38
	- Change in Prepaid Expenses	(9,961.41)	(0.35)	(0.26)
	Change in Accounts Payable	(1,154.55)	(0.04)	(0.03)
	Selling Expense of Capital Items	0.00	0.00	0.00
	Depreciation on Purchased Breeding Livestock	800.86	0.03	0.02
	Total Basic Cost	357,057.06	12.42	9.37



Table 3-7, Part 2

The Average Cost of Production Report for the 28 Great Lakes Graziers with 100 or more Cows.
This report shows Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details.

Interest Cost		per Farm	per CWT Sold	per CWT EQ
	Mortgage Interest	18,782.79	0.65	0.49
	Other Interest	4,588.30	0.16	0.12
	Total Interest Cost	23,371.09	0.81	0.61
Labor Cost				
	Employee Benefits - Dependents	0.00	0.00	0.00
	Employee Benefits - Non-Dependents	142.43	0.00	0.00
	Labor Hired - Dependents	2,406.39	0.08	0.06
	Labor Hired - Non-Dependents	53,909.82	1.87	1.42
	Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
	Value of Unpaid Labor & Management	48,450.25	1.68	1.27
	Total Labor Cost	104,908.89	3.65	2.75
Depreciation & Equity Cost				
	Machinery, Equipment, Building Depreciation	54,836.32	1.91	1.44
	Interest on Equity Capital	52,660.91	1.83	1.38
	Total Depreciation & Equity Cost	107,497.23	3.74	2.82
	Total Expenses	592,834.27	20.62	15.56
	Total Income - Total Expenses	20,408.50	0.71	0.54
Net Farm Income from Operations (NFIFO) Summary				
	Total Allocated Costs	491,723.11	17.10	12.91
	Net Farm Income From Operations (NFIFO)	121,519.66	4.23	3.19
	Gain (Loss) on Sale of All Farm Capital Assets	807.32	0.03	0.02
	Net Farm Income (NFI)	122,326.98	4.25	3.21



Table 3-8, part 1

The Average AgFA® Financial Measures Report for the 28 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$121,519.66	\$640.48	\$3.19
Net Farm Income	\$122,326.98	\$644.74	\$3.21
Rate of Return on Assets (ROROA)	24.89%	24.89%	24.89%
Cost (Tax) Depreciation Claimed	\$55,637.18	\$293.24	\$1.46
Rate of Return on Equity	N/A	N/A	N/A
Net Profit Margin	15.86 %	15.86 %	15.86 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.570	1.570	1.570
Note: Some methods of calculating Basic Cost Ratio	0.582	0.582	0.582
Wages Paid Ratios into a single ratio (Operating Cost Ratio).	0.092	0.092	0.092
Interest Paid Ratio	0.038	0.038	0.038
Depreciation Ratio	0.089	0.089	0.089
Net Farm Income from Operations Ratio	0.198	0.198	0.198
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$140,854.27	\$742.38	\$3.70
Coverage Margin	\$83,472.38	\$439.95	\$2.19
Term Debt Coverage Ratio	2.87	2.87	2.87
Liquidity			
Net Cash Income	\$127,896.50	\$674.09	\$3.36
Working Capital	\$89,509.47	\$471.77	\$2.35
Current Ratio	2.62	2.62	2.62
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$672,176.50	\$3,542.77	\$17.65
Beginning Total Farm Liabilities	\$366,361.62	\$1,930.94	\$9.62
Beginning Farm Net Worth	\$305,814.88	\$1,611.82	\$8.03
Farm Debt to Asset Ratio - Beginning of Year	0.657	0.657	0.657
Ending Total Farm Assets	\$782,770.32	\$4,125.66	\$20.55
Ending Total Farm Liabilities	\$441,346.21	\$2,326.15	\$11.59
Ending Farm Net Worth	\$341,424.10	\$1,799.51	\$8.96
Year Ending Farm Debt to Asset Ratio	0.564	0.564	0.564
Cost Basis Change in Farm Net Worth	\$35,609.22	\$187.68	\$0.93



Table 3-8, Part 2

The Average AgFA® Financial Measures Report for the 28 Great Lakes Graziers with 100 or more Cows

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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$149,255.44	\$786.66	\$3.92
Net Farm Income	\$150,062.77	\$790.92	\$3.94
Rate of Return on Assets (ROROA)	8.58 %	8.58 %	8.58 %
Economic Depreciation Claimed	\$27,901.40	\$147.06	\$0.73
Rate of Return on Equity	9.65 %	9.65 %	9.65 %
Net Profit Margin	20.38 %	20.38 %	20.38 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.421	0.421	0.421
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio	0.582	0.582
Wages Paid Ratio	0.092	0.092	0.092
Interest Paid Ratio	0.038	0.038	0.038
Depreciation Ratio	0.044	0.044	0.044
Net Farm Income from Operations Ratio	0.243	0.243	0.243
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$140,854.27	\$738.00	\$3.68
Coverage Margin	\$83,472.38	\$439.95	\$2.19
Term Debt Coverage Ratio	2.87	2.86	2.86
Liquidity			
Net Cash Income	\$127,896.50	\$674.09	\$3.36
Working Capital	\$89,509.47	\$471.77	\$2.35
Current Ratio	2.62	2.62	2.62
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$1,360,630.53	\$7,171.32	\$35.72
Beginning Total Farm Liabilities	\$366,361.62	\$1,930.94	\$9.62
Beginning Farm Net Worth	\$994,268.91	\$5,240.38	\$26.10
Farm Debt to Asset Ratio - Beginning of Year	0.269	0.269	0.269
Ending Total Farm Assets	\$1,553,513.83	\$8,187.93	\$40.79
Ending Total Farm Liabilities	\$441,346.21	\$2,326.15	\$11.59
Ending Farm Net Worth	\$1,112,167.62	\$5,861.78	\$29.20
Year Ending Farm Debt to Asset Ratio	0.284	0.284	0.284
Total Change in Farm Net Worth	\$117,898.71	\$621.40	\$3.10



Table 3-9

The Average AgFA© Balance Sheet for the 28 Great Lakes Graziers in 2004 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	14,638	14,325		
Prepaid Expenses & Purchased Inventories	16,658	26,620		
Raised Feed Inventories	61,407	70,280		
Basis in Resale Livestock Purchased	683	313		
Accounts Receivable	20,560	26,785		
Market Livestock & Etc.	5,296	6,326		
Total Current Assets	119,242	144,648		
Non-Current Assets				
			<u>Beg. Dollars</u>	<u>End Dollars</u>
Raised Breeding Livestock	324,973	348,891		
Purchased Breeding Livestock	418	429	915	907
Machinery & Equipment	196,116	222,624	35,684	42,478
Buildings	61,044	81,211	24,990	42,886
Land & House	587,218	672,049	141,657	172,739
Other Non-Current Assets	71,620	83,662	24,716	30,221
Total Non-Current Assets	1,241,389	1,408,866	227,961	289,231
Total Farm Assets	1,360,631	1,553,514		
Current Liabilities				
Accounts Payable	15,863	14,708		
Current Portion of Non-Current Liabilities	33,810	39,913		
Other Current Liabilities	6,119	518		
Total Current Liabilities	55,792	55,139		
Non-Current Liabilities				
Intermediate Liabilities	41,344	47,645		
Long-Term Liabilities	269,226	338,563		
Contingent Liabilities	293,820	329,604		
Total Non-Current Liabilities	604,390	715,811		
Total Farm Liabilities	660,182	770,950		
Non-Farm Assets	35,827	36,598		
Non-Farm Liabilities	2,378	2,052		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	3,071	3,071	0
Retained Earnings ¹	302,743	338,353	35,609
	394,634	441,140	46,506
Valuation Adjustment			
Total Farm Equities	700,448	782,564	82,115
Non-Farm Equities	33,450	34,547	1,097
Total Equities	733,898	817,110	83,212

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

XV. Why the Changes in the Seasonal Calving/Milking Strategy Comparison from 2000 to 2004?

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/milking 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/milking 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 semi-seasonal (bunch calving) 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. There are fewer than 20 seasonal herds in any of the years analyzed.

Comparing the Five Years (also See the Wisconsin Version Below)

A lot of variability in the financial performance has appeared in the calving strategy comparison in this multi-state data from 2000 to 2004.

The seasonal group had a substantial advantage in NFIFO per cow and per CWT EQ over non-seasonal herds in 2004. As in 2001, the milk price pattern was unusually favorable to the spring calving/milking strategy, compared to many years of price history.

The 2003 results are somewhat unique in that the NFIFO per cow were 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 per CWT EQ of \$2.58 versus \$2.01 in 2003.

In 2002, the non-seasonal herds had a nearly two-to-one advantage in NFIFO per cow. The non-seasonal NFIFO per CWT EQ was 34% higher than the seasonal NFIFO per CWT EQ in 2002.

In 2001, the seasonal herds had almost 1.5 times the NFIFO per cow and NFIFO per CWT EQ than the non-seasonal herds.

In 2000, the non-seasonal herds had more than twice the NFIFO per CWT EQ and NFIFO per cow.

The highest NFIFO per cow achieved by a non-seasonal herd was twice as high as the highest NFIFO per cow achieved by a seasonal herd in all years. The highest non-seasonal NFIFO per CWT EQ typically was 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 was typically at least double the seasonal range. In all years, the high and low performances were in the non-seasonal group.

The average herd size of the average seasonal herd was much smaller in the two high milk price years (85 in 2001 and 107 in 2004 versus at least 141 in the other three years). Part of the change in herd size occurred because the largest herd providing seasonal data in the project provided seasonal data in 2002 and 2003, but not in the other years.

Looking at Wisconsin Seasonal Calving/Milking to Minimize the Impact of State-to-State Differences

As explained further in Chapter VI, relatively consistent differences in financial performance between states appeared in all years. Because of these state-to-state differences, it was recognized early in the project that comparing graziers from a higher performing state to confinement from a lower performing state could produce

a very different result than obtained when graziers were compared to confinement herds from the same state. Therefore the grazier versus confinement comparison has been made within states. As explained in Chapter VI, the average Wisconsin grazier consistently had a higher NFIFO per CWT EQ than the average grazier from any other state contributing ten or more observations per year. Wisconsin seasonal graziers also had a higher NFIFO per CWT EQ than multi-state seasonal graziers in three of five years. Most of the other seasonal data came from states that contribute very little non-seasonal data. Since Wisconsin provided a much higher proportion of seasonal data than non-seasonal data, **the multi-state seasonal calving/milking financial performance from 2000 to 2004 (and illustrated in Chapters XV and XVI) was enhanced by the state-to-state differences.**

Wisconsin and multi-state seasonal herds had an advantage over non-seasonal herds in 2001 and 2004, but the Wisconsin seasonal herds' advantage over Wisconsin non-seasonal herds was much smaller. In 2003, the Wisconsin seasonal herds had a small disadvantage over non-seasonal herds in contrast to a small advantage for multi-state seasonal herds over multi-state non-seasonal herds. Wisconsin and multi-state seasonal herds had a disadvantage in 2000 and 2002. The Wisconsin seasonal advantage was smaller than the multi-state advantage in 2002.

Comparing Wisconsin seasonal with Wisconsin non-seasonal herds from 1995 to 2004, the non-seasonal herds had higher NFIFO per CWT EQ in seven of ten and higher NFIFO per cow in eight of ten years compared to seasonal herds.

In five years of multi-state data and ten years of Wisconsin data, no seasonal herd has attained the NFIFO per cow or NFIFO per CWT EQ levels achieved by the highest performing non-seasonal herds, including 2004 and 2001, years in which (as explained later) the milk price pattern was extremely favorable for seasonal herds. When all the evidence is considered, it appears **more likely that a non-seasonal herd will perform better than a seasonal herd** in terms of economic profitability (NFIFO per cow and NFIFO per CWT EQ).

Selection Bias Appears To Be a Major Factor in Explaining The Year-to-Year Differences

Twenty-seven different seasonal calving/milking herds have submitted at least one year of useable data to this multi-state project. Of these herds, 18 have been a part of the Prograssstinators, a multi-state grazing network that deliberately examines the actual farm financial performance of its members. Their interest in financial performance is an important reason for their inclusion in this project. A high percent of the Prograssstinators members have practiced seasonal calving/milking for a number of years.

The number of summarized seasonal farms changed from 7 in 2000 to 18 in 2001 to 13 in 2002 to 14 in 2003 and 12 in 2004. 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 and 2004.

Of the 12 seasonal herds included in the 2004 summary, 10 were included in 2003, 7 were included in 2002, 6 were included in 2001, and 2 were included in 2000.

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.

Because farms entered and left the study during the five years, some variation in comparison results is to be expected. Primarily because the sharing of farm financial data is a voluntary act, data are 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 per cow and \$2.40 NFIFO per 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 per cow and \$3.53 NFIFO per 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 per cow of \$983 and an average NFIFO per CWT EQ of \$5.32.

The milk price pattern in 2004 and 2001 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 2004 and 2001 were lowest in January, February, November and December – months of low 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 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. In 2004, the annual average milk price advantage for the seasonal herds over the non-seasonal herds was \$1.64 in the multi-state data and \$2.60 in the Wisconsin data. The multi-state "seasonal price advantage" 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 from 1995 to 1999 ranged from \$1.07 to -\$0.58. Seasonal herds are less likely to have Holsteins but the data shows that price differences between calving/milking strategies was less influenced by breed than by price pattern.

In a few words, the financial performance of the average seasonal grazer in the 2001 and 2004 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 and 2004 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 with Non-Seasonal Calving/Milking Strategy in 2004

The average seasonal grazer in 2004 had more desirable financial performance than the average non-seasonal herd, when NFIFO per cow, NFIFO per CWT EQ or total NFIFO were used as the yardstick. The seasonal herds also had a large advantage in 2001. **This is a sharp contrast** to the 2002 and 2000 data and with multiple years of other calving/milking strategy comparisons. The seasonal group had only a slight advantage in 2003.

Unfortunately for research purposes, less than 15 percent of the herds in the five years of summaries practiced seasonal calving/milking. The average seasonal herd in the 2004 data had 17% more cows and produced about 72% as much milk per cow as the cows in the non-seasonal herds.

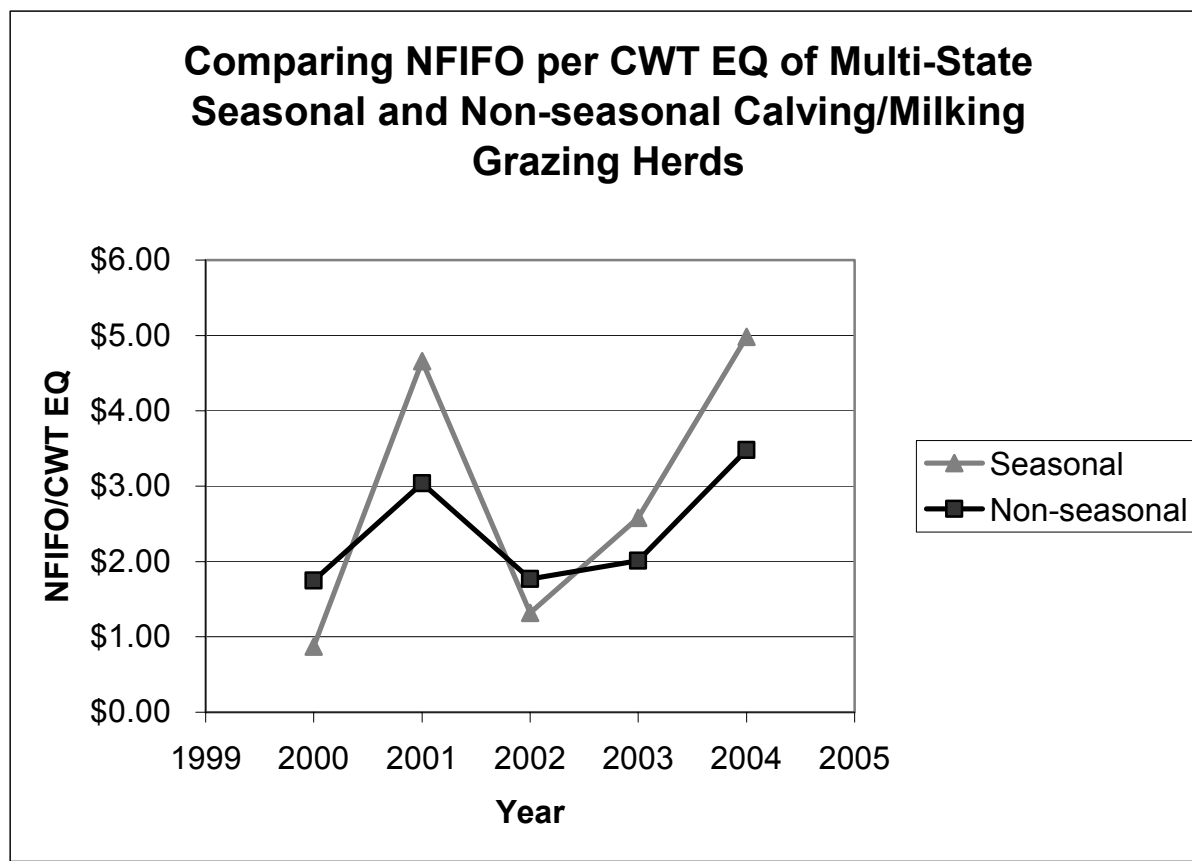
The seasonal herds spent a little bit less per CWT EQ for most of the basic cost categories compared to the non-seasonal herds. However, the seasonal herds spent \$0.66/CWT EQ more for purchased feed, \$0.13 more for fertilizer and lime, \$0.13 more for rent and leases. Overall, the seasonal herds spent \$0.27 less per CWT EQ for all basic costs in 2004.

The seasonal herds also had a combined \$0.97 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 2004 had a \$0.38 per CWT EQ advantage in paid labor and management expense, \$0.10 per CWT EQ in interest expense and a \$0.49 advantage in depreciation per CWT EQ.

The \$0.97 per CWT EQ advantage in the non-basic costs of the seasonal herds, plus the seasonal herd's total basic cost advantage of \$0.50 per CWT EQ, accounts for the \$1.50 (\$4.98 – 3.48) advantage that the seasonal herds had in NFIFO per CWT EQ.

If all labor and management compensation were unpaid, the NFIFO per CWT EQ would increase to \$5.72 for the seasonal and to \$3.48 for the non-seasonal herds.

Graph 4-1



Seasonal calving/milking graziers represent no more than 15% of the data in any year. Many of them are members of a multi-state grazing network called Prograsstinators. Most of the network members are **highly experienced and emphasize financial performance**. The non-seasonal group also includes some graziers that tried to be seasonal but didn't fit the definition in a particular year.

The milk price pattern was about ideal for spring seasonal calving/milking herds in 2001 and 2004. The milk price pattern was more historically normal in the other years.

State-to-state differences in financial performance favored seasonal herds in graph 4-1 and table 4-1 because a disproportional number of seasonal graziers usually were from states that consistently exhibited higher financial performance and few were from states that consistently exhibited lower financial performance. See Chapter VI for a more extensive discussion about the state-to-state differences. When the state-to-state differences were minimized by comparing Wisconsin seasonal to non-seasonal performance, the **Wisconsin non-seasonal herds had a NFIFO per CWT EQ advantage in seven of 10 years and higher NFIFO per cow in eight of ten years compared to Wisconsin 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	2004	2000	2001	2002	2003	2004
Number of Herds	7	18	13	14	12	85	101	90	88	89
Number of Cows per Herd	145	85	141	143	107	85	84	78	79	91
Average Lbs. Milk per Cow	11,667	12,270	11,044	11,528	11,727	17,560	15,695	16,454	16,494	16,297
Average Lbs. Milk per Herd	1,691,715	1,044,970	1,560,561	1,645,234	1,230,137	1,496,401	1,325,900	1,283,544	1,296,821	1,489,367
Group Average Mailbox Milk Price	\$13.70	\$17.50	\$13.05	\$14.45	\$19.15	\$13.06	\$16.14	\$13.85	\$14.38	\$17.51
U.S. All Milk Price (used to calculate CWT EQ)*	\$12.33	\$14.94	\$12.15	\$12.50	\$16.10	\$12.33	\$14.94	\$12.15	\$12.50	\$16.10
Average Basic Cost per CWT EQ	\$6.73	\$7.67	\$8.02	\$7.57	\$8.86	\$7.96	\$8.69	\$7.69	\$7.84	\$9.39
Allocated Cost per CWT EQ	\$11.46	\$10.28	\$10.83	\$9.92	\$11.12	\$10.58	\$11.90	\$10.38	\$10.49	\$12.62
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$4.73	\$2.61	\$2.81	\$2.35	\$2.26	\$2.62	\$3.21	\$2.69	\$2.65	\$3.23
NFIFO per Cow (if all labor was unpaid)	\$404	\$1,101	\$381	\$609	\$1,038	\$602	\$825	\$683	\$687	\$972
NFIFO per CWT EQ (if all labor was unpaid)	\$2.20	\$5.46	\$2.36	\$3.40	\$5.72	\$2.64	\$4.21	\$2.89	\$2.99	\$4.60
NFIFO per Farm	\$23,202	\$73,322	\$30,061	\$65,921	\$97,114	\$33,913	\$50,413	\$32,686	\$36,264	\$67,128
NFIFO per Cow	\$160	\$861	\$213	\$462	\$904	\$398	\$597	\$419	\$461	\$738
NFIFO per CWT EQ	\$0.87	\$4.66	\$1.32	\$2.58	\$4.98	\$1.75	\$3.04	\$1.77	\$2.01	\$3.48

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

Tables 4-2 to 4-9 provide more information about the financial performance of the average seasonal and the average non-seasonal herd.



Table 4-2, Part 1
The Average AgFA© Farm Earnings Report for the 12 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)

Income	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Basis in Resale Livestock Sold	0.00	0.00	0.00
Animal Product Sales	241,604.58	2,248.36	12.39
Raised Non-Breeding Livestock Sales	12,320.75	114.66	0.63
Crop Sales	125.92	1.17	0.01
Distributions Received from Cooperatives	295.92	2.75	0.02
Agricultural Program Payments	4,925.08	45.83	0.25
MILC Program Payments	282.42	2.63	0.01
Custom Hire (Machine Work) Income	1,072.17	9.98	0.05
Other Income, Incl. Tax Credits, Refunds	1,869.00	17.39	0.10
Basis in Breeding Livestock Sold	(3,537.50)	(32.92)	(0.18)
Sale of Raised Breeding Livestock	22,488.42	209.28	1.15
Total Cash Income - Basis Adjustments	281,446.75	2,619.12	14.43
Non-Cash Income			
Change in Raised Crop Inventories	2,699.00	25.12	0.14
Change in Remaining Current Assets	6,401.58	59.57	0.33
Change in Raised Breeding Livestock	23,443.33	218.16	1.20
Total Non-Cash Income	32,543.92	302.85	1.67
Total Income	313,990.67	2,921.98	16.10



Table 4-2, Part 2
The Average AgFA© Farm Earnings Report for the 12 Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)

Expenses	2004 per Farm	2004 per Cow	2004 per CWT EQ
Cash Expense			
Cost of Items for Resale	0.00	0.00	0.00
Breeding Fees	2,308.92	21.49	0.12
Car and Truck Expenses	852.50	7.93	0.04
Chemicals	489.58	4.56	0.03
Conservation Expenses	351.58	3.27	0.02
Custom Heifer Raising Expenses	398.58	3.71	0.02
Custom Hire (Machine Work)	5,021.50	46.73	0.26
Employee Benefits - Dependents	0.00	0.00	0.00
Employee Benefits - Non-Dependents	0.00	0.00	0.00
Feed Purchase	81,277.75	756.37	4.17
Fertilizer and Lime	9,910.25	92.22	0.51
Freight and Trucking	949.42	8.84	0.05
Gasoline, Fuel, and Oil	4,739.08	44.10	0.24
Farm Insurance	2,706.42	25.19	0.14
Mortgage Interest	9,168.33	85.32	0.47
Other Interest	1,030.33	9.59	0.05
Labor Hired - Dependents	0.00	0.00	0.00
Labor Hired - Non-Dependents	14,468.83	134.65	0.74
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	1,286.92	11.98	0.07
Rent/Lease Other	8,165.17	75.98	0.42
Repairs and Maintenance	12,570.58	116.98	0.64
Building and Fence Repairs	713.58	6.64	0.04
Seeds and Plants Purchased	2,918.92	27.16	0.15
Storage and Warehousing	0.00	0.00	0.00
Supplies Purchased	8,375.50	77.94	0.43
Taxes - Other	3,038.33	28.27	0.16
Taxes - Payroll	0.00	0.00	0.00
Utilities	6,476.58	60.27	0.33
Veterinary Fees and Medicine	5,177.75	48.18	0.27
Other Farm Expenses	7,054.58	65.65	0.36
Marketing & Hedging	9,011.25	83.86	0.46
Other Crop Expenses	41.17	0.38	0.00
Other Livestock Expenses	2,628.25	24.46	0.13
Total Cash Expense	201,131.67	1,871.72	10.31
Non-Cash Expenses			
- Change in Prepaid Expenses	(8,122.42)	(75.59)	(0.42)
Change in Accounts Payable	(2,829.92)	(26.34)	(0.15)
Machinery, Equipment and Building Depreciation	19,514.08	181.60	1.00
Livestock Depreciation	7,183.33	66.85	0.37
Total Non-Cash Expenses	15,745.08	146.52	0.81
Total Expenses	216,876.75	2,018.24	11.12
Net Farm Income From Operations (NFIFO)	97,113.92	903.74	4.98
Gain (Loss) on Sale of All Farm Capital Assets	91.67	0.85	0.00
Net Farm Income (NFI)	97,205.58	904.59	4.98



Table 4-3, Part 1

**The Average AgFA® Cost of Production Report for the 12 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

Income		<u>2004</u> Cost (tax)	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
	Total Income	313,990.67	24.92	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	0.00	0.00	0.00
	Breeding Fees	2,308.92	0.18	0.12
	Car and Truck Expenses	852.50	0.07	0.04
	Chemicals	489.58	0.04	0.03
	Conservation Expenses	351.58	0.03	0.02
	Custom Heifer Raising Expenses	398.58	0.03	0.02
	Custom Hire (Machine Work)	5,021.50	0.40	0.26
	Feed Purchase	81,277.75	6.45	4.17
	Fertilizer and Lime	9,910.25	0.79	0.51
	Freight and Trucking	949.42	0.08	0.05
	Gasoline, Fuel, and Oil	4,739.08	0.38	0.24
	Farm Insurance	2,706.42	0.21	0.14
	Rent/Lease Equipment	1,286.92	0.10	0.07
	Rent/Lease Other	8,165.17	0.65	0.42
	Repairs and Maintenance	12,570.58	1.00	0.64
	Building and Fence Repairs	713.58	0.06	0.04
	Seeds and Plants Purchased	2,918.92	0.23	0.15
	Storage and Warehousing	0.00	0.00	0.00
	Supplies Purchased	8,375.50	0.66	0.43
	Taxes - Other	3,038.33	0.24	0.16
	Taxes - Payroll	0.00	0.00	0.00
	Utilities	6,476.58	0.51	0.33
	Veterinary Fees and Medicine	5,177.75	0.41	0.27
	Other Farm Expenses	7,054.58	0.56	0.36
	Marketing & Hedging	9,011.25	0.72	0.46
	Other Crop Expenses	41.17	0.00	0.00
	Other Livestock Expenses	2,628.25	0.21	0.13
	- Change in Prepaid Expenses	(8,122.42)	(0.64)	(0.42)
	Change in Accounts Payable	(2,829.92)	(0.22)	(0.15)
	Depreciation on Purchased Breeding Livestock	7,183.33	0.57	0.37
	Total Basic Cost	172,695.17	13.70	8.86



Table 4-3, Part 2

**The Average AgFA® Cost of Production Report for the 12 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

	2004 Cost (tax)	2004 per CWT Sold	2004 per CWT EQ
Interest Cost			
Mortgage Interest	9,168.33	0.73	0.47
Other Interest	1,030.33	0.08	0.05
Total Interest Cost	10,198.67	0.81	0.52
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	14,468.83	1.15	0.74
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	38,870.17	3.08	1.99
Total Labor Cost	53,339.00	4.23	2.73
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	19,514.08	1.55	1.00
Interest on Equity Capital	22,754.94	1.81	1.17
Total Depreciation & Equity Cost	42,269.02	3.35	2.17
Total Expenses	278,501.86	22.10	14.28
Total Income - Total Expenses	35,488.81	2.82	1.82
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	216,876.75	17.21	11.12
Net Farm Income From Operations (NFIFO)	97,113.92	7.71	4.98
Gain (Loss) on Sale of All Farm Capital Assets	91.67	0.01	0.00
Net Farm Income (NFI)	97,205.58	7.71	4.98



Table 4-4, Part 1

**The Average AgFA© Financial Measures Report for the 12 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$97,113.92	\$903.74	\$4.98
Net Farm Income	\$97,205.58	\$904.59	\$4.98
Rate of Return on Assets (ROROA)	58.41%	58.41%	58.41%
Cost (Tax) Depreciation Claimed	\$26,697.42	\$248.44	\$1.37
Rate of Return on Equity	N/A	N/A	N/A
Net Profit Margin	21.83 %	21.83 %	21.83 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	2.676	2.676	2.676
Basic Cost Ratio	0.550	0.550	0.550
Wages Paid Ratio	0.046	0.046	0.046
Interest Paid Ratio	0.032	0.032	0.032
Depreciation Ratio	0.062	0.062	0.062
Net Farm Income from Operations Ratio	0.309	0.309	0.309
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$93,663.33	\$871.62	\$4.80
Coverage Margin	\$68,367.28	\$636.22	\$3.51
Term Debt Coverage Ratio	4.03	4.03	4.03
Liquidity			
Net Cash Income	\$83,852.58	\$780.33	\$4.30
Working Capital	\$45,555.40	\$423.94	\$2.34
Current Ratio	3.33	3.33	3.33
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$278,465.00	\$2,591.38	\$14.28
Beginning Total Farm Liabilities	\$167,127.17	\$1,555.27	\$8.57
Beginning Farm Net Worth	\$111,337.83	\$1,036.10	\$5.71
Farm Debt to Asset Ratio - Beginning of Year	0.668	0.668	0.668
Ending Total Farm Assets	\$319,034.75	\$2,968.92	\$16.36
Ending Total Farm Liabilities	\$185,971.25	\$1,730.64	\$9.54
Ending Farm Net Worth	\$133,063.50	\$1,238.28	\$6.82
Year Ending Farm Debt to Asset Ratio	0.583	0.583	0.583



Table 4-4, Part 2

**The Average AgFA© Financial Measures Report for the 12 Seasonal Great Lakes Graziers
(Stop Milking Herd at Least One Day Each Year)**

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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$104,459.62	\$972.09	\$5.36
Net Farm Income	\$104,551.28	\$972.95	\$5.36
Rate of Return on Assets (ROROA)	12.01 %	12.01 %	12.01 %
Economic Depreciation Claimed	\$19,351.71	\$180.09	\$0.99
Rate of Return on Equity	14.43 %	14.43 %	14.43 %
Net Profit Margin	24.17 %	24.17 %	24.17 %

Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)

	Asset Turnover Ratio	0.497	0.497	0.497
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio	0.550	0.550	0.550
	Wages Paid Ratio	0.046	0.046	0.046
	Interest Paid Ratio	0.032	0.032	0.032
	Depreciation Ratio	0.039	0.039	0.039
	Net Farm Income from Operations Ratio	0.333	0.333	0.333

Repayment Capacity

Capital Replacement & Debt Repayment Capacity	\$93,663.33	\$804.78	\$4.43
Coverage Margin	\$68,367.28	\$636.22	\$3.51
Term Debt Coverage Ratio	4.03	3.75	3.75

Liquidity

Net Cash Income	\$83,852.58	\$780.33	\$4.30
Working Capital	\$45,555.40	\$423.94	\$2.34
Current Ratio	3.33	3.33	3.33

Solvency (Assets at Market Value)

Beginning Total Farm Assets	\$590,276.76	\$5,493.08	\$30.27
Beginning Total Farm Liabilities	\$167,127.17	\$1,555.27	\$8.57
Beginning Farm Net Worth	\$423,149.59	\$3,937.80	\$21.70
Farm Debt to Asset Ratio - Beginning of Year	0.283	0.283	0.283
Ending Total Farm Assets	\$673,019.30	\$6,263.07	\$34.51
Ending Total Farm Liabilities	\$185,971.25	\$1,730.64	\$9.54
Ending Farm Net Worth	\$487,048.05	\$4,532.44	\$24.97
Year Ending Farm Debt to Asset Ratio	0.276	0.276	0.276
Total Change in Farm Net Worth	\$63,898.45	\$594.63	\$3.28



Table 4-5

**The Average AgFA® Balance Sheet Report for the 12 Seasonal Great Lakes Graziers in 2004
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	17,227	17,828		
Prepaid Expenses & Purchased Inventories	8,760	16,883		
Raised Feed Inventories	10,141	12,840		
Basis in Resale Livestock Purchased	0	0		
Accounts Receivable	8,432	14,238		
Market Livestock & Etc.	2,734	3,330		
Total Current Assets	47,294	65,118		
Non-Current Assets			<u>Beg.</u>	<u>End</u>
Raised Breeding Livestock	169,692	193,135	<u>Dollars</u>	<u>Dollars</u>
Purchased Breeding Livestock	0	0	0	0
Machinery & Equipment	102,062	104,353	10,172	9,980
Buildings	37,080	36,735	19,527	17,355
Land & House	225,497	263,721	29,535	31,160
Other Non-Current Assets	8,652	9,957	2,246	2,287
Total Non-Current Assets	542,983	607,901	61,479	60,782
Total Farm Assets	590,277	673,019		
Current Liabilities				
Accounts Payable	4,793	1,963		
Current Portion of Non-Current Liabilities	15,585	17,600		
Other Current Liabilities	1,381	0		
Total Current Liabilities	21,759	19,562		
Non-Current Liabilities				
Intermediate Liabilities	23,229	18,359		
Long-Term Liabilities	122,140	148,050		
Contingent Liabilities	133,199	155,687		
Total Non-Current Liabilities	278,568	322,096		
Total Farm Liabilities	300,326	341,658		
Non-Farm Assets	17,929	18,299		
Non-Farm Liabilities	5,340	4,689		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	0	0	0
Retained Earnings ¹	111,338	133,064	21,726
Valuation Adjustment	178,613	198,297	19,685
Total Farm Equities	289,951	331,361	41,410
Non-Farm Equities	12,590	13,609	1,020
Total Equities	302,540	344,970	42,430

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



Table 4-6, Part 1

The Average AgFA© Farm Earnings Report for the 89 Non-Seasonal Great Lakes Graziers

Income	<u>2004</u> per Farm	<u>2004</u> per Cow	<u>2004</u> per CWT EQ
Cash Income - Basis Adjustments			
Sales of Livestock and Other Items Bought for Resale	72.42	0.79	0.00
Basis in Resale Livestock Sold	(129.89)	(1.42)	(0.01)
Animal Product Sales	261,875.08	2,865.44	13.57
Raised Non-Breeding Livestock Sales	5,673.36	62.08	0.29
Crop Sales	2,028.34	22.19	0.11
Distributions Received from Cooperatives	437.49	4.79	0.02
Agricultural Program Payments	6,003.42	65.69	0.31
MILC Program Payments	414.00	4.53	0.02
Crop Insurance Proceeds and Certain Disaster Payments	8.65	0.09	0.00
Custom Hire (Machine Work) Income	1,448.65	15.85	0.08
Other Income, Incl. Tax Credits, Refunds	3,871.34	42.36	0.20
Sale of Purchased Breeding Livestock	83.01	0.91	0.00
Basis in Breeding Livestock Sold	(227.27)	(2.49)	(0.01)
Sale of Raised Breeding Livestock	13,439.10	147.05	0.70
Total Cash Income - Basis Adjustments	294,997.69	3,227.86	15.28
Non-Cash Income			
Change in Raised Crop Inventories	4,367.27	47.79	0.23
Change in Remaining Current Assets	2,261.11	24.74	0.12
Change in Raised Breeding Livestock	9,173.83	100.38	0.48
Total Non-Cash Income	15,802.21	172.91	0.82
Total Income	310,799.90	3,400.77	16.10



Table 4-6, Part 2

The Average AgFA© Farm Earnings Report for the 89 Non-Seasonal Great Lakes Graziers

Expenses	2004	2004	2004
Cash Expense	per Farm	per Cow	per CWT EQ
Cost of Items for Resale	103.70	1.13	0.01
Breeding Fees	3,330.23	36.44	0.17
Car and Truck Expenses	793.66	8.68	0.04
Chemicals	2,156.49	23.60	0.11
Conservation Expenses	0.00	0.00	0.00
Custom Heifer Raising Expenses	445.26	4.87	0.02
Custom Hire (Machine Work)	9,229.34	100.99	0.48
Employee Benefits - Dependents	31.70	0.35	0.00
Employee Benefits - Non-Dependents	201.69	2.21	0.01
Feed Purchase	65,833.19	720.35	3.41
Fertilizer and Lime	7,370.30	80.65	0.38
Freight and Trucking	2,360.42	25.83	0.12
Gasoline, Fuel, and Oil	7,433.28	81.33	0.39
Farm Insurance	4,041.57	44.22	0.21
Mortgage Interest	9,483.19	103.77	0.49
Other Interest	2,437.82	26.67	0.13
Labor Hired - Dependents	1,220.00	13.35	0.06
Labor Hired - Non-Dependents	20,294.27	222.06	1.05
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Rent/Lease Equipment	788.10	8.62	0.04
Rent/Lease Other	5,521.60	60.42	0.29
Repairs and Maintenance	17,983.00	196.77	0.93
Building and Fence Repairs	1,459.51	15.97	0.08
Machinery Repairs	903.37	9.88	0.05
Seeds and Plants Purchased	4,510.39	49.35	0.23
Storage and Warehousing	12.75	0.14	0.00
Supplies Purchased	6,916.21	75.68	0.36
Taxes - Other	5,091.97	55.72	0.26
Taxes - Payroll	37.66	0.41	0.00
Utilities	6,951.25	76.06	0.36
Veterinary Fees and Medicine	6,344.85	69.43	0.33
Other Farm Expenses	7,478.56	81.83	0.39
Marketing & Hedging	8,013.63	87.69	0.42
Other Crop Expenses	544.69	5.96	0.03
Other Livestock Expenses	7,554.81	82.66	0.39
Selling Expense of Capital Items	0.00	0.00	0.00
Total Cash Expense	216,878.46	2,373.08	11.23
Non-Cash Expenses			
- Change in Prepaid Expenses	(3,639.53)	(39.82)	(0.19)
Change in Accounts Payable	452.42	4.95	0.02
Machinery, Equipment and Building Depreciation	28,811.11	315.25	1.49
Livestock Depreciation	1,169.11	12.79	0.06
Total Non-Cash Expenses	26,793.11	293.17	1.39
Total Expenses	243,671.57	2,666.25	12.62
Net Farm Income From Operations (NFIFO)	67,128.33	734.52	3.48
Gain (Loss) on Sale of All Farm Capital Assets	942.07	10.31	0.05
Net Farm Income (NFI)	68,070.39	744.83	3.53



Table 4-7, Part 1

**The Average AgFA© Cost of Production Report for the 89 Non-Seasonal Great Lakes Graziers
Showing Basic Costs, Allocated Costs, Total Costs, FIFO and Other Financial Details**

Income		<u>2004</u>	<u>2004</u>	<u>2004</u>
		Cost (tax)	per CWT Sold	per CWT EQ
Total Income		310,799.90	20.87	16.10
Expenses				
Basic Cost				
	Cost of Items for Resale	103.70	0.01	0.01
	Breeding Fees	3,330.23	0.22	0.17
	Car and Truck Expenses	793.66	0.05	0.04
	Chemicals	2,156.49	0.14	0.11
	Conservation Expenses	0.00	0.00	0.00
	Custom Heifer Raising Expenses	445.26	0.03	0.02
	Custom Hire (Machine Work)	9,229.34	0.62	0.48
	Feed Purchase	65,833.19	4.42	3.41
	Fertilizer and Lime	7,370.30	0.49	0.38
	Freight and Trucking	2,360.42	0.16	0.12
	Gasoline, Fuel, and Oil	7,433.28	0.50	0.39
	Farm Insurance	4,041.57	0.27	0.21
	Rent/Lease Equipment	788.10	0.05	0.04
	Rent/Lease Other	5,521.60	0.37	0.29
	Repairs and Maintenance	17,983.00	1.21	0.93
	Building and Fence Repairs	1,459.51	0.10	0.08
	Machinery Repairs	903.37	0.06	0.05
	Seeds and Plants Purchased	4,510.39	0.30	0.23
	Storage and Warehousing	12.75	0.00	0.00
	Supplies Purchased	6,916.21	0.46	0.36
	Taxes - Other	5,091.97	0.34	0.26
	Taxes - Payroll	37.66	0.00	0.00
	Utilities	6,951.25	0.47	0.36
	Veterinary Fees and Medicine	6,344.85	0.43	0.33
	Other Farm Expenses	7,478.56	0.50	0.39
	Marketing & Hedging	8,013.63	0.54	0.42
	Other Crop Expenses	544.69	0.04	0.03
	Other Livestock Expenses	7,554.81	0.51	0.39
	- Change in Prepaid Expenses	(3,639.53)	(0.24)	(0.19)
	Change in Accounts Payable	452.42	0.03	0.02
	Selling Expense of Capital Items	0.00	0.00	0.00
	Depreciation on Purchased Breeding Livestock	1,169.11	0.08	0.06
	Total Basic Cost	181,191.80	12.17	9.39



Table 4-7, Part 2

**The Average AgFA© Cost of Production Report for the 89 Non-Seasonal Great Lakes Graziers
Showing Basic Costs, Allocated Costs, Total Costs, NFIFO and Other Financial Details**

	<u>2004</u> Cost (tax)	<u>2004</u> per CWT Sold	<u>2004</u> per CWT EQ
Interest Cost			
Mortgage Interest	9,483.19	0.64	0.49
Other Interest	2,437.82	0.16	0.13
Total Interest Cost	11,921.02	0.80	0.62
Labor Cost			
Employee Benefits - Dependents	31.70	0.00	0.00
Employee Benefits - Non-Dependents	201.69	0.01	0.01
Labor Hired - Dependents	1,220.00	0.08	0.06
Labor Hired - Non-Dependents	20,294.27	1.36	1.05
Pension and Profit-Sharing Plans - Dependents	0.00	0.00	0.00
Value of Unpaid Labor & Management	38,591.07	2.59	2.00
Total Labor Cost	60,338.72	4.05	3.13
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	28,811.11	1.93	1.49
Interest on Equity Capital	32,500.24	2.18	1.68
Total Depreciation & Equity Cost	61,311.35	4.12	3.18
Total Expenses	314,762.88	21.13	16.31
Total Income - Total Expenses	(3,962.98)	(0.27)	(0.21)
Net Farm Income from Operations (NFIFO) Summary			
Total Allocated Costs	243,671.57	16.36	12.62
Net Farm Income From Operations (NFIFO)	67,128.33	4.51	3.48
Gain (Loss) on Sale of All Farm Capital Assets	942.07	0.06	0.05
Net Farm Income (NFI)	68,070.39	4.57	3.53



Table 4-8, Part 1

The Average AgFA© Financial Measures Report for the 89 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$67,128.33	\$734.52	\$3.48
Net Farm Income	\$68,070.39	\$744.83	\$3.53
Rate of Return on Assets (ROROA)	17.92%	17.92%	17.91%
Cost (Tax) Depreciation Claimed	\$29,980.22	\$328.04	\$1.55
Rate of Return on Equity	144.30 %	144.30 %	144.30 %
Net Profit Margin	13.32 %	13.32 %	13.32 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	1.333	1.333	1.333
Note: Some methods of calculating ratios combine the Basic Cost and Wages Paid Ratios into a single ratio (Operating Cost Ratio).	Basic Cost Ratio	0.583	0.583
	Wages Paid Ratio	0.070	0.070
Interest Paid Ratio	0.038	0.038	0.038
Depreciation Ratio	0.093	0.093	0.093
Net Farm Income from Operations Ratio	0.216	0.216	0.216
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$73,731.89	\$806.77	\$3.82
Coverage Margin	\$42,294.14	\$462.78	\$2.19
Term Debt Coverage Ratio	2.72	2.72	2.72
Liquidity			
Net Cash Income	\$78,476.39	\$858.69	\$4.07
Working Capital	\$37,283.35	\$407.95	\$1.93
Current Ratio	2.14	2.14	2.14
Solvency (Assets at Cost, including current assets and raised breeding livestock)			
Beginning Total Farm Assets	\$379,769.32	\$4,155.43	\$19.67
Beginning Total Farm Liabilities	\$202,338.35	\$2,213.99	\$10.48
Beginning Farm Net Worth	\$177,430.96	\$1,941.45	\$9.19
Farm Debt to Asset Ratio - Beginning of Year	0.588	0.588	0.588
Ending Total Farm Assets	\$422,857.96	\$4,626.91	\$21.90
Ending Total Farm Liabilities	\$223,125.65	\$2,441.44	\$11.56
Ending Farm Net Worth	\$199,732.31	\$2,185.47	\$10.35
Year Ending Farm Debt to Asset Ratio	0.528	0.528	0.528
Cost Basis Change in Farm Net Worth	\$22,301.35	\$244.02	\$1.16



Table 4-8, Part 2

The Average AgFA© Financial Measures Report for the 89 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	2004	2004	2004
	per Farm	per Cow	per CWT EQ
Net Farm Income From Operations	\$83,113.35	\$909.43	\$4.31
Net Farm Income	\$84,055.42	\$919.73	\$4.35
Rate of Return on Assets (ROROA)	6.65 %	6.65 %	6.65 %
Economic Depreciation Claimed	\$13,986.21	\$153.04	\$0.72
Rate of Return on Equity	6.99 %	6.99 %	6.99 %
Net Profit Margin	18.46 %	18.46 %	18.46 %
Financial Efficiency Ratios (These ratios are calculated using Total Farm Income, not Value of Farm Production.)			
Asset Turnover Ratio	0.360	0.360	0.360
Note: Some methods of calculating Basic Cost Ratio	0.582	0.582	0.582
ratios combine the Basic Cost and Wages Paid Ratio	0.070	0.070	0.070
Wages Paid Ratios into a single Interest Paid Ratio	0.038	0.038	0.038
ratio (Operating Cost Ratio). Depreciation Ratio	0.042	0.042	0.042
Net Farm Income from Operations Ratio	0.267	0.267	0.267
Repayment Capacity			
Capital Replacement & Debt Repayment Capacity	\$73,731.89	\$798.12	\$3.78
Coverage Margin	\$42,294.14	\$462.78	\$2.19
Term Debt Coverage Ratio	2.72	2.69	2.69
Liquidity			
Net Cash Income	\$78,476.39	\$858.69	\$4.07
Working Capital	\$37,283.35	\$407.95	\$1.93
Current Ratio	2.14	2.14	2.14
Solvency (Assets at Market Value)			
Beginning Total Farm Assets	\$824,798.80	\$9,024.94	\$42.73
Beginning Total Farm Liabilities	\$202,338.35	\$2,213.99	\$10.48
Beginning Farm Net Worth	\$622,460.45	\$6,810.96	\$32.24
Farm Debt to Asset Ratio - Beginning of Year	0.245	0.245	0.245
Ending Total Farm Assets	\$900,638.95	\$9,854.79	\$46.65
Ending Total Farm Liabilities	\$223,125.65	\$2,441.44	\$11.56
Ending Farm Net Worth	\$677,513.30	\$7,413.35	\$35.10
Year Ending Farm Debt to Asset Ratio	0.248	0.248	0.248
Total Change in Farm Net Worth	\$55,052.85	\$602.39	\$2.85



Table 4-9

The Average AgFA® Balance Sheet Report for the 89 Non-Seasonal Great Lakes Graziers in 2004
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	6,930	6,479		
Prepaid Expenses & Purchased Inventories	8,029	11,668		
Raised Feed Inventories	33,656	38,023		
Basis in Resale Livestock Purchased	233	98		
Accounts Receivable	9,196	11,042		
Market Livestock & Etc.	2,295	2,709		
Total Current Assets	60,339	70,021		
Non-Current Assets				
			<u>Beg.</u>	<u>End</u>
			<u>Dollars</u>	<u>Dollars</u>
Raised Breeding Livestock	163,572	172,746		
Purchased Breeding Livestock	790	1,566	1,452	1,834
Machinery & Equipment	120,668	132,693	27,149	29,922
Buildings	48,327	57,440	23,140	31,427
Land & House	317,813	343,591	77,494	87,786
Other Non-Current Assets	113,290	122,582	26,625	29,122
Total Non-Current Assets	764,460	830,618	155,859	180,091
Total Farm Assets	824,799	900,639		
Current Liabilities				
Accounts Payable	6,306	6,767		
Current Portion of Non-Current Liabilities	19,600	21,569		
Other Current Liabilities	5,273	4,402		
Total Current Liabilities	31,179	32,738		
Non-Current Liabilities				
Intermediate Liabilities	24,816	26,032		
Long-Term Liabilities	146,343	164,356		
Contingent Liabilities	173,387	187,503		
Total Non-Current Liabilities	344,547	377,891		
Total Farm Liabilities	375,726	410,629		
Non-Farm Assets	51,531	54,756		
Non-Farm Liabilities	1,631	1,264		

Statement of Equities (Net Worth)

	<u>Beginning</u>	<u>Ending</u>	<u>Change</u>
Contributed Capital	2,119	2,194	75
Retained Earnings ¹	175,312	197,538	22,226
Valuation Adjustment	271,642	290,278	18,636
Total Farm Equities	449,073	490,010	40,937
Non-Farm Equities	49,901	53,492	3,591
Total Equities	498,974	543,502	44,528

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

XVII. Comparing Grazing Herds to Confinement Herds

Five Year Summary

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.

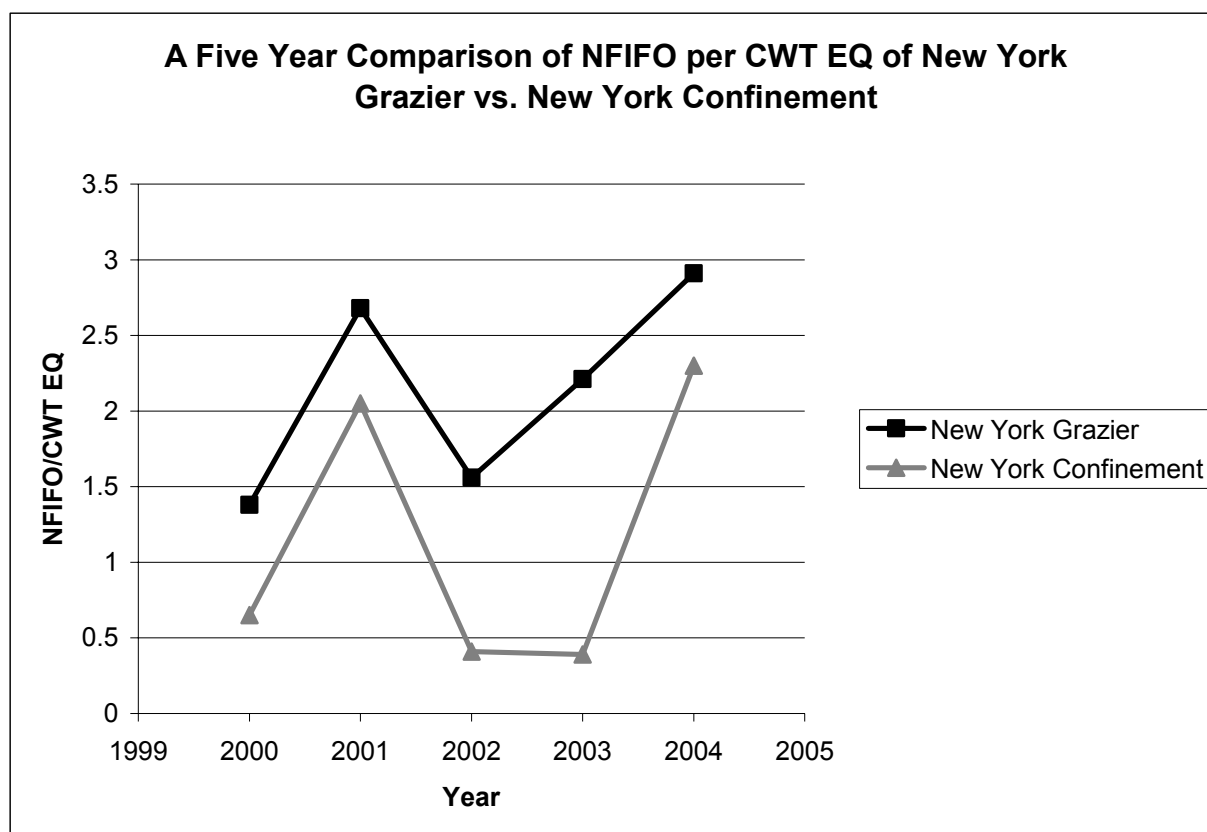
In all five years, the Wisconsin graziers had an advantage over their confinement counterparts in NFIFO per CWT EQ and per cow and in the basic, non-basic and allocated cost/CWT EQ categories. The smallest advantage occurred in 2003. If all labor was unpaid, Wisconsin graziers would have retained their NFIFO per CWT EQ advantage in all years but 2003 and their NFIFO per cow advantage in 2000 to 2002.

In all five years, the New York graziers had an advantage over their confinement counterparts in NFIFO per CWT EQ and in the allocated and non-basic cost categories. New York graziers had a NFIFO per cow advantage over their confinement counterparts in the first four years and a slight disadvantage in 2004. If all labor was unpaid, New York graziers would have kept their NFIFO per cow advantage in 2003 and 2002 and would have kept their NFIFO per CWT EQ advantage in 2000, 2002, and 2003.

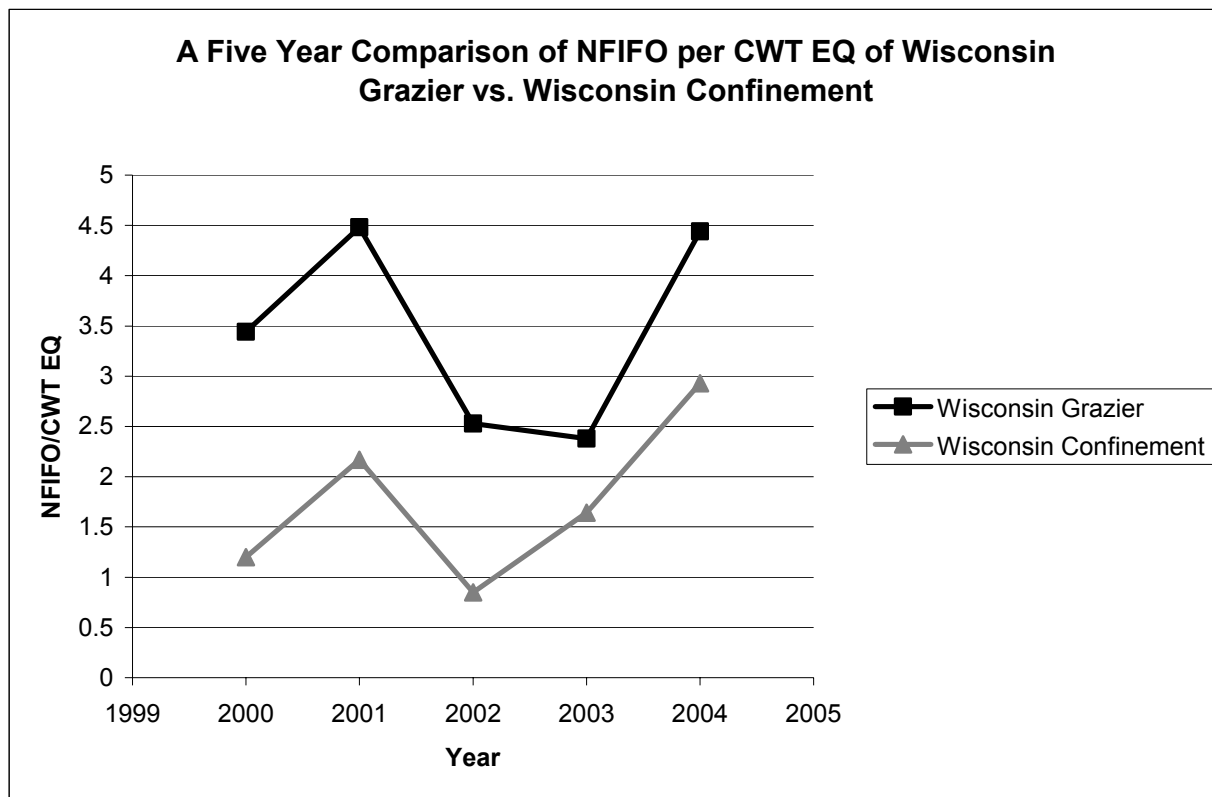
The New York graziers had an advantage in the basic cost category in two years and a very slight disadvantage in the other three years. Together, this suggests that the graziers in this study spread their NFIFO per CWT EQ advantage among many cost items.

A higher percent of total labor used on the larger confinement farms was hired. To better understand the effects of this information on financial performance, it is useful to examine the impact of labor compensation on NFIFO per cow and NFIFO per CWT EQ by recalculating NFIFO as if all labor was unpaid.

Graph 5-1



Graph 5-2



2004 Data

As shown in Table 5-1 below, the Wisconsin graziers' NFIFO per CWT EQ advantage in 2004 would narrow from \$1.51 (\$4.44-\$2.93) to \$0.24(\$4.95-\$4.71) if all labor was unpaid. In addition, the NFIFO per cow advantage would disappear, narrowing from \$202 (\$966-\$764) to -\$153 (\$1076-\$1229) in 2004 if all labor compensation was unpaid.

The New York graziers' NFIFO per CWT EQ advantage in 2004 would disappear from \$0.61 (\$2.91-\$2.30) to -\$0.21 (\$4.39-\$4.60) if all labor compensation was unpaid. The NFIFO per cow disadvantage would increase from -\$6 (\$602-\$608) to -\$309 (\$908-\$1,217) if all labor compensation was unpaid.

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 2004	Wisconsin		New York	
	Grazier	Confinement	Grazier	Confinement
Number of Herds	38	660	29	151
Number of Cows per Herd	65	134	111	387
Average Lbs. Milk per Cow	16,526	21,277	16,116	22,465
Average Lbs. Milk per Herd	1,078,890	2,855,985	1,789,972	8,693,937
Group Average Mailbox Milk Price	\$17.29	\$16.72	\$17.67	\$16.61
U.S. All Milk Price (used to calculate CWT EQ)*	\$16.10	\$16.10	\$16.10	\$16.10
Average Basic Cost per CWT EQ	\$8.54	\$9.57	\$10.00	\$9.91
Allocated Cost per CWT EQ	\$11.66	\$13.17	\$13.19	\$13.80
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$3.12	\$3.60	\$3.19	\$3.89
NFIFO per Cow (if all labor was unpaid)	\$1,076	\$1,229	\$908	\$1,217
NFIFO per CWT EQ (if all labor was unpaid)	\$4.95	\$4.71	\$4.39	\$4.60
NFIFO per Farm	\$63,091	\$102,600	\$68,896	\$235,396
NFIFO per Cow	\$966	\$764	\$602	\$608
NFIFO per CWT EQ	\$4.44	\$2.93	\$2.91	\$2.30

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

As shown in Table 5-2 below, the Wisconsin graziers' NFIFO per CWT EQ advantage in 2003 would disappear from \$0.74 (\$2.38-\$1.64) to -\$0.34(\$2.78-\$3.12) if all labor was unpaid. In addition, the NFIFO per cow advantage would disappear, narrowing from \$36 (\$504-\$468) to -\$304 (\$518-\$892) in 2003 if all labor was unpaid.

The New York graziers' NFIFO per CWT EQ advantage in 2003 would narrow from \$1.82 (\$2.21-\$0.39) to \$0.98 (\$3.42-\$2.44) if all labor was unpaid. The NFIFO per cow advantage would narrow from \$410 (\$518-\$108) to \$128 (\$800-\$672) if all labor compensation was unpaid.

2003 is a bit different from the other years in that Wisconsin graziers had their smallest advantage 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 5-2 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 (if all labor was unpaid)	\$588	\$892	\$800	\$672
NFIFO per CWT EQ (if all labor was unpaid)	\$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, basic costs of both groups are equal.

As shown in Table 5-3 below, the Wisconsin graziers' NFIFO per CWT EQ advantage in 2002 would narrow from \$1.68 (\$2.53 – \$0.85) to \$0.78 (\$3.14 – \$2.36) if all labor was unpaid. In addition, the NFIFO per cow advantage would nearly disappear, narrowing from \$294 (\$524 – \$230) to \$10 (\$651 – \$641) in 2002 if all labor was unpaid.

The New York graziers' NFIFO per 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 was unpaid. The NFIFO per cow advantage would narrow from \$255 (\$374-\$119) to \$114 (\$786-\$672) if all labor was unpaid.

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

Table 5-3 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 (if all labor was unpaid)	\$651	\$641	\$786	\$672
NFIFO Per CWT EQ (if all labor was unpaid)	\$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 5-4 below, the Wisconsin grazer NFIFO per CWT EQ advantage in 2001 would narrow from \$2.31 (\$4.48 – \$2.17) to \$1.27 (\$5.02 – \$3.75) if all labor was unpaid. In addition, the NFIFO per cow advantage would nearly disappear, narrowing from \$322 (\$842 – \$520) to \$36 (\$933 – \$897) in 2001 if all labor was unpaid.

The New York grazer NFIFO per CWT EQ advantage in 2001 would narrow from \$0.63 (\$2.68 - \$2.05) to - \$0.11 (\$3.96-\$4.07) if all labor was unpaid. The New York grazer advantage in NFIFO per cow would disappear from \$41 (\$549-\$508) to -\$353 (\$810-\$1163) if all labor was unpaid. In addition, the New York confinement herds would have had a higher NFIFO per cow than the Wisconsin confinement and grazing herds in 2001 if all labor was unpaid.

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 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 (if all labor was unpaid)	933	897	810	1163
NFIFO per CWT EQ (if all labor was unpaid)	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 5-5 below, the Wisconsin graziers' NFIFO per CWT EQ advantage in 2000 would narrow from \$2.24 (\$3.44-\$1.20) to \$0.90 (\$3.50-\$2.60) if all labor was unpaid. In addition, the NFIFO per cow advantage would narrow from \$321 (\$617-\$296) to \$49 (\$689-\$640) in 2000 if all labor was unpaid.

The New York graziers' NFIFO per CWT EQ advantage in 2000 would narrow from \$0.73 (\$1.38-\$0.65) to \$0.53 (\$2.34-\$1.81) if all labor was unpaid. The NFIFO per cow advantage would disappear from \$134 (\$315-\$181) to -\$129 (\$534-\$663) if all labor was unpaid.

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

Table 5-5 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 (if all labor was unpaid)	\$689	\$640	\$534	\$663
NFIFO per CWT EQ (if all labor was unpaid)	\$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.

Graziers' NFIFO per CWT EQ advantage was spread across many cost items. Still, 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, was more profitable on a per CWT EQ basis than their confinement counterparts in all years in spite of lower production per cow. In the five years, 60% of the Wisconsin graziers' NFIFO per CWT EQ advantage occurred among the non-basic costs. The comparable value for New York was 113%.

XVIII. Major Cost Items

A. Major Cost Items on Wisconsin Grazing and Confinement Dairy Farms

Cost management should receive regular attention on any farm. Focusing on the largest cost categories is an important tactic in controlling costs.

It is widely believed that there is a big difference in cost structure between grazing and non-grazing dairy farms. Actual farm financial data shows that **the similarities are as striking as the differences.**

Ten years (1995-2004) of comparisons of the financial performance of an average of 26 grazing herds and an average of 736 confinement herds in Wisconsin show that graziers in the data consistently had lower costs per hundredweight equivalent (CWT EQ) and per dollar of income at the basic, non-basic, allocated and total cost levels and had higher net farm income from operations (NFIFO)/CWT EQ than their confinement counterparts (**Important. See cost definitions in Chapter IX.**)

As explained in Chapter VI, comparing different systems within the same state is more useful than comparing one system from one state to another system from a different state.

Differences

Graziers' basic costs tend to be 90% of the confinement basic cost/CWT EQ. Graziers non-basic costs tend to be about 73% of the confinement non-basic cost/CWT EQ. In ten years, 57% of the graziers' advantage in NFIFO per CWT EQ resulted from their advantage in non-basic costs. The graziers' advantage was spread across many cost items.

Basic costs typically used 70% of allocated costs for confinement and 74% for grazing herds.
Basic costs typically used 60% of income for confinement and 54% for grazing herds.

Non-basic costs typically used 30% of allocated costs for confinement and 26% for grazing herds.
Non-basic costs typically used 25% of income for confinement and 18% for grazing herds.

With 72.4% of income used up by allocated costs (basic plus non-basic), 27.6 cents of every dollar of income was left for NFIFO (returns to unpaid labor, management and equity) for graziers.

With 85.7% of income used up by allocated costs (basic plus non-basic), 14.3 cents of every dollar of income was left for NFIFO (returns to unpaid labor, management and equity) for confinement farms.

*Without non-farm income, NFIFO (plus depreciation taken) is **the annual source** of family living funds.*

Similarities

A striking similarity is that the four largest cost items per CWT EQ were essentially the same for both graziers and confinement.

The Big Four Grazing Dairy Costs! (used 55.4% of the total allocated cost and 40% of the income)
The Big Four Confinement Dairy Costs! (used 52.0% of the total allocated cost and almost 45% of the income)

Graziers			Confinement	
1.	Purchased feed	20.70% of income	Purchased feed	18.70% of income
2.	Non-livestock depreciation	9.30% of income	Paid Labor & Mgt	10.40% of income
3.	Interest	5.20% of income	Non-livestock depr	9.70% of income
4.	Repairs	4.80% of income	Interest	5.90% of income

The Second Big Four! (used another 13% of income for graziers and 16% of income for confinement farms)

Graziers		Confinement		
5.	Paid Labor and Mgt	4.0% of income	Repairs	5.5% of income
6.	Supplies	3.8% of income	Other Farm Expense	4.1% of income
7.	Other Farm Expense	2.9% of income	Rent	3.6% of income
8.	Vet and Medicine	2.3% of income	Supplies	3.0% of income

The “High Five” cost items were the same for graziers and confinement although the ranking differs a little bit.

1. **Purchased feed** was the highest cost category for each system each year. It ranged from 25% to 33% of the allocated cost on grazing and 20% to 26% on confinement farms. It ranged from 16% to 21% of income for both systems. Paid labor and management, depreciation and interest were the other three of the four major costs for all systems. These three cost categories together are the non-basic cost category and typically accounted for another 25% of allocated costs on grazing and 30% on confinement farms. These three cost categories used from 17% to 21% of income on grazing and 22% to 28% of income on confinement farms depending on the year. Purchased feed is a basic cost. For graziers, purchased feed cost was often larger than the total non-basic costs.

Purchased feed was a higher percent of total allocated costs and income for graziers because most of them feed grain but few of them raised grain. Most confinement farms feed and raise grain. Obviously the purchased feed category doesn't measure the cost of raised feed.

2. **Non-livestock depreciation is a non-basic cost and was the second largest cost** in most years for graziers. It was second or a close third for confinement herds. It ranged from 8% to 15% of total allocated costs for grazing and 9% to 17% for confinement herds. It ranged from 6% to 14% of total income for grazing and 7% to 13% of income for confinement herds.

Livestock depreciation is a basic cost and was much smaller than non-livestock depreciation. Its amount ranged from 1.9% to 3.2% of income for confinement herds and from 0.3% to 2.5% of income for graziers. Herds that increase or maintain size by purchasing replacements experience higher amounts of livestock depreciation. If livestock depreciation were added to non-livestock depreciation, its ranking among cost categories would not change.

3. **Paid labor and management is a non-basic cost and was the second highest cost category for confinement herds** in most years. It was third highest when it wasn't in second place. For graziers, it ranked from third to sixth highest among the ten years. It ranged from 10% to 13% of total allocated costs and 8% to 12% of income for confinement, and 4% to 8% of allocated costs and 3% to 6% of income for graziers. The difference between confinement and grazing in this category is exaggerated by the fact that the grazing data had less dependent labor in it. Much of the dependent labor paid on farms is paid to family members for tax management purposes.
4. **Interest** ranged from about 5% to 9% of total allocated cost and 4% to 7% of income for graziers and confinement herds.
5. **Rounding out the high five, repair** costs were the third highest in three years, fourth highest in four years, and fifth highest in three years for graziers. **Repair** costs were the fourth highest in two years and fifth highest in eight years for confinement herds.

The four cost items included in the second big four but not the high five in either system are all basic costs. “Other farm expense” and “supplies” were in the second big four for both systems but difficult to interpret since each one can contain a wide variety of individual items.

Rent paid for any farm asset (land, buildings, equipment) was part of the second big four only for confinement herds. Vet and medicine was part of the second big four only for graziers.

Two cost items that often are thought of as being major use a much smaller part of income than most people would suspect. These two items are **veterinary and medicine expense and property tax**. Property tax typically represented about 1.9% of income for graziers and 1.4% of income for confinement. Prior to use value assessment of farm land in Wisconsin, property tax used about 2.2% of income for both groups. Veterinary and medicine typically represented about 2.3% of grazer income and 2.8% of income for confinement herds.

The ranking of major cost items in the “high five” list may differ slightly from the ranking in the tables mainly because the rankings in the “high five” list combine both dairy systems. In addition, expense items were ranked each year for each system to obtain ranges in values discussed in the “high five” list. Remember that an average doesn’t reveal the amount of variation from one year to another.

Table 6-1 uses a ten year simple average of the cost of production per CWT EQ, percent of allocated cost and per dollar of income for cost items from Wisconsin graziers and Wisconsin confinement herds available from the AgFA database. The cost items are shown in the same sequence for graziers and confinement herds to help readers compare specific cost items between the two dairy systems. The cost items appear in a format fairly similar to their appearance in a typical AgFA© cost of production report with basic costs shown nearly alphabetically. Non-basic costs are listed below the basic costs. NFIFO and NFI are also shown below total costs.

The same data are formatted differently in **Table 6-2** where cost items are ranked from highest to lowest, separately for graziers and confinement herds. Total costs, NFIFO and NFI are not included in Table 6-2.

Careful readers of the tables will notice that all of the percentages in a column add up to more than 100%. That is because the tables include major cost categories such as allocated, basic and non-basic and total, in addition to the individual cost items that make up these larger categories. For example, non-basic costs include paid labor and management, interest and non-livestock depreciation. Because of rounding, other small mathematical differences might be found in the tables.

Table 6-1 Wisconsin Grazier and Confinement Ten Year Average Cost of Production

	<u>Wis. Grazier 10 Year Average</u> Cost of Production			<u>Wis. Confinement 10 Year Average</u> Cost of Production		
	/CWT EQ	As a % of Allocated Cost	As a % of Income	/CWT EQ	As a % of Allocated Cost	As a % of Income
U. S. Average Milk Price	\$13.88		100.00%	\$13.88		100.00%
<u>Cash Expenses</u>						
Breeding Fees	\$0.14	1.39%	1.01%	\$0.15	1.26%	1.08%
Car and Truck Expense	\$0.04	0.40%	0.29%	\$0.07	0.59%	0.50%
Chemicals	\$0.05	0.50%	0.36%	\$0.20	1.68%	1.44%
Conservation Expenses	\$0.00	0.00%	0.00%	\$0.00	0.00%	0.00%
Custom Hire (Machine Work)	\$0.28	2.79%	2.02%	\$0.36	3.03%	2.59%
Custom Heifer Raising	\$0.01	0.10%	0.07%	\$0.05	0.42%	0.36%
Feed Purchase	\$2.88	28.66%	20.75%	\$2.59	21.78%	18.66%
Fertilizer and Lime	\$0.31	3.08%	2.23%	\$0.36	3.03%	2.59%
Freight and Trucking	\$0.12	1.19%	0.86%	\$0.12	1.01%	0.86%
Gasoline, Fuel, and Oil	\$0.21	2.09%	1.51%	\$0.27	2.27%	1.95%
Farm Insurance	\$0.18	1.79%	1.30%	\$0.17	1.43%	1.22%
Marketing & Hedging	\$0.16	1.59%	1.15%	\$0.17	1.43%	1.22%
Rent/Lease Equipment	\$0.09	0.90%	0.65%	\$0.10	0.84%	0.72%
Rent/Lease Other	\$0.22	2.19%	1.59%	\$0.50	4.21%	3.60%
Repairs all	\$0.67	6.67%	4.83%	\$0.76	6.39%	5.48%
Seeds and Plants Purchased	\$0.17	1.69%	1.22%	\$0.29	2.44%	2.09%
Supplies Purchased	\$0.53	5.27%	3.82%	\$0.42	3.53%	3.03%
Taxes - Other	\$0.26	2.59%	1.87%	\$0.20	1.68%	1.44%
Taxes - Payroll	\$0.00	0.00%	0.00%	\$0.00	0.00%	0.00%
Utilities	\$0.28	2.79%	2.02%	\$0.27	2.27%	1.95%
Veterinary Fees and Medicine	\$0.32	3.18%	2.31%	\$0.39	3.28%	2.81%
Other Farm Expenses	\$0.40	3.98%	2.88%	\$0.57	4.79%	4.11%
Other Crop Expenses	\$0.03	0.30%	0.22%	\$0.04	0.34%	0.29%
Combined Non-Cash Adjustments	-\$0.05	-0.50%	-0.36%	-\$0.04	-0.34%	-0.29%
Depreciation: Livestock	\$0.15	1.49%	1.08%	\$0.27	2.27%	1.95%
Total Basic Cost	\$7.47	74.33%	53.82%	\$8.28	69.64%	59.65%
Total Interest Cost	\$0.72	7.16%	5.19%	\$0.82	6.90%	5.91%
Total Dependent Labor Cost	\$0.03	0.30%	0.22%	\$0.42	3.53%	3.03%
Total Non-Dependent Labor Cost	\$0.54	5.37%	3.89%	\$1.02	8.58%	7.35%
Total Paid Labor Cost	\$0.56	5.57%	4.03%	\$1.44	12.11%	10.37%
Depreciation: Non-livestock	\$1.29	12.84%	9.29%	\$1.35	11.35%	9.73%
Total Non-basic Cost	\$2.57	25.57%	18.52%	\$3.51	29.52%	25.29%
Total Allocated Cost (Basic + Non-basic)	\$10.05	100.00%	72.41%	\$11.89	100.00%	85.66%
Unpaid Labor/Management	\$2.40	23.88%	17.29%	\$1.26	10.60%	9.08%
Interest On Equity	\$1.23	12.24%	8.86%	\$1.04	8.75%	7.49%
Total Opportunity Cost	\$3.63	36.12%	26.15%	\$2.30	19.34%	16.57%
Total Cost	\$13.68	136.12%	98.56%	\$14.19	119.34%	102.23%
Total Income - Total Cost	\$0.20			-\$0.31		
Net Farm Income from Operations (NFIFO)	\$3.83	38.11%	27.59%	\$1.99	16.74%	14.34%
Gain (Loss) on Sale of All Farm Assets	\$0.05	0.50%	0.36%	\$0.04	34.00%	0.29%
Net Farm Income (NFI)	\$3.88	38.61%	27.95%	\$2.02	16.99%	14.55%

Table 6-2 Wisconsin Grazier and Confinement 10 Year Average Cost of Production Items Ranked from Highest to Lowest

	Wisconsin Grazier 10 Year Average		
	Cost of Production		
	As a % of	As a % of	
	/CWT EQ	Allocated Cost	Income
U. S. Average Milk Price	\$13.88		100.00%
Cash Expenses			
Total Allocated Costs (Basic + Non-basic)	\$10.05	100.00%	72.41%
Total Basic Cost	\$7.47	74.33%	53.82%
Feed Purchase	\$2.88	28.66%	20.75%
Non-basic Cost	\$2.57	25.57%	18.52%
Depreciation: Non-livestock	\$1.29	12.84%	9.29%
Total Interest Cost	\$0.72	7.16%	5.19%
Repairs all	\$0.67	6.67%	4.83%
Total Paid Labor	\$0.56	5.57%	4.03%
Total Non-Dependent Labor	\$0.54	5.37%	3.89%
Supplies Purchased	\$0.53	5.27%	3.82%
Other Farm Expenses	\$0.40	3.98%	2.88%
Veterinary Fees and Medicine	\$0.32	3.18%	2.31%
Fertilizer and Lime	\$0.31	3.08%	2.23%
Custom Hire (Machine Work)	\$0.28	2.79%	2.02%
Utilities	\$0.28	2.79%	2.02%
Taxes - Other	\$0.26	2.59%	1.87%
Rent/Lease Other	\$0.22	2.19%	1.59%
Gasoline, Fuel, and Oil	\$0.21	2.09%	1.51%
Farm Insurance	\$0.18	1.79%	1.30%
Seeds and Plants Purchased	\$0.17	1.69%	1.22%
Marketing & Hedging	\$0.16	1.59%	1.15%
Depreciation: Livestock	\$0.15	1.49%	1.08%
Breeding Fees	\$0.14	1.39%	1.01%
Freight and Trucking	\$0.12	1.19%	0.86%
Rent/Lease Equipment	\$0.09	0.90%	0.65%
Chemicals	\$0.05	0.50%	0.36%
Car and Truck Expense	\$0.04	0.40%	0.29%
Other Crop Expenses	\$0.03	0.30%	0.22%
Total Dependent Labor	\$0.03	0.30%	0.22%
Custom Heifer Raising	\$0.01	0.10%	0.07%
Combined Non-Cash Adjustments	-\$0.05	-0.50%	-0.36%

	Wisconsin Confinement 10 Year Average		
	Cost of Production		
	As a % of	As a % of	
	/CWT EQ	Allocated Cost	Income
U. S. Average Milk Price	\$13.88		100.00%
Cash Expenses			
Total Allocated Costs (Basic + Non-basic)	\$11.89	100.00%	85.66%
Total Basic Cost	\$8.28	69.64%	59.65%
Non-basic Cost	\$3.51	29.52%	25.29%
Feed Purchase	\$2.59	21.78%	18.66%
Total Paid Labor	\$1.44	12.11%	10.37%
Depreciation: Non-livestock	\$1.35	11.35%	9.73%
Total Non-Dependent Labor	\$1.02	8.58%	7.35%
Total Interest Cost	\$0.82	6.90%	5.91%
Repairs all	\$0.76	6.39%	5.48%
Other Farm Expenses	\$0.57	4.79%	4.11%
Rent/Lease Other	\$0.50	4.21%	3.60%
Supplies Purchased	\$0.42	3.53%	3.03%
Total Dependent Labor	\$0.42	3.53%	3.03%
Veterinary Fees and Medicine	\$0.39	3.28%	2.81%
Fertilizer and Lime	\$0.36	3.03%	2.59%
Custom Hire (Machine Work)	\$0.36	3.03%	2.59%
Seeds and Plants Purchased	\$0.29	2.44%	2.09%
Depreciation: Livestock	\$0.27	2.27%	1.95%
Utilities	\$0.27	2.27%	1.95%
Gasoline, Fuel, and Oil	\$0.27	2.27%	1.95%
Taxes - Other	\$0.20	1.68%	1.44%
Chemicals	\$0.20	1.68%	1.44%
Marketing & Hedging	\$0.17	1.43%	1.22%
Farm Insurance	\$0.17	1.43%	1.22%
Breeding Fees	\$0.15	1.26%	1.08%
Freight and Trucking	\$0.12	1.01%	0.86%
Rent/Lease Equipment	\$0.10	0.84%	0.72%
Car and Truck Expense	\$0.07	0.59%	0.50%
Custom Heifer Raising	\$0.05	0.42%	0.36%
Other Crop Expenses	\$0.04	0.34%	0.29%
Combined Non-Cash Adjustments	-\$0.04	-0.34%	-0.29%

B. Major Cost Items on Great Lakes Grazing Network (GLGN) Grazing Dairy Farms

Cost data from GLGN farms provide an interesting comparison to Wisconsin grazing and confinement farms (**Important. See cost definitions in Chapter IX**).

In this five-year average:

- Basic costs represented 74% of allocated costs and 61% of income.
- Non-basic costs represented 26% of allocated costs and 21% of income.
- **With 82% of income used up by allocated costs (basic plus non-basic), 18 cents of every dollar of income was left for NFIFO** (NFIFO equals returns to unpaid labor, management and equity).
*Without non-farm income, NFIFO (plus depreciation taken) is **the annual source** of family living funds.*

The Big Four Costs! (used over half of the total allocated cost and almost half of the income for GLGN grazing dairy farms)

1. Purchased feed	27.0% of allocated cost and 22.0% of income
2. Non-livestock depreciation	11.0% of allocated cost and 9.0% of income
3. Paid labor and management	9.0% of allocated cost and 8.0% of income
4. Repairs	7.0% of allocated cost and 6.0% of income

Purchased feed was easily the highest cost category each year. **Paid labor and management, non-livestock depreciation and repairs** were the other three of the four major costs for GLGN grazing dairy farms. These three cost categories together typically account for another 27% of allocated costs and 23% of income on GLGN grazing farms. Paid labor and management and non-livestock depreciation are non-basic costs. Purchased feed and repairs are basic costs. For the GLGN graziers, the five year average purchased feed cost was slightly larger than total non-basic costs.

Livestock depreciation is a basic cost and was much smaller than non-livestock depreciation. Its amount averaged less than one percent of income for GLGN graziers. Herds that increase or maintain size by purchasing replacements experience higher amounts of livestock depreciation. If livestock depreciation were added to non-livestock depreciation, its second place ranking among cost categories would not change.

Paid labor is a non-basic cost and was the third highest cost category in four years. It was second highest when it wasn't in third place.

The Second Big Four Costs!

5. Interest	6.0% of allocated cost and 5.0% of income
6. Marketing and hedging	4.0% of allocated cost and 3.0% of income
7. Other livestock expense	3.0% of allocated cost and 2.0% of income
8. Supplies	3.0% of allocated cost and 2.0% of income

Collectively, the second "big four" accounted for about another 16% of allocated cost and 12% of income. In some years, interest was the fourth largest cost item for GLGN grazing herds. Interest is a non-basic cost. "Marketing and hedging," "other livestock expense," and "supplies" are basic costs and are more difficult to interpret since each one can contain a wide variety of individual items.

Once again, property tax and veterinary and medicine expense was a smaller portion of allocated cost and income than many perceive. Property tax typically represented about 2% of allocated cost and 2% of income. Veterinary and medicine typically represented about 3% of the allocated cost and 2% of income.

Cost of Production (COP) Table

The five year (2000-2004) simple average COP report is shown in **Table 6-3** two ways. First, costs are shown in the COP sequence used in AgFA© to show the calculation of allocated, basic, non-basic and total cost. Secondly, cost items are ranked from highest to lowest to help understand and control costs. Individual year performance was also examined in these ways from an average of 105 farms per year.

Columns show each cost item per hundredweight equivalent, as a percent of allocated cost, and as a percent of a dollar of income. Careful readers of the tables will notice that all of the percentages in a column add up to more than 100%. That is because the tables include major cost categories such as allocated, basic, non-basic and total (**defined in Chapter IX**), in addition to the individual cost items that make up these larger categories. For example non-basic costs are paid labor and management, interest and non-livestock depreciation. Because of rounding, other small mathematical differences might be found in the tables.

Table 6-3 Great Lakes Grazing Network Grazer Five-Year Average Cost of Production

Standard Cost of Production Report	Cost of Production			Cost Items Ranked from Highest to Lowest	Cost of Production		
	/CWT EQ	As a % of Allocated Cost	As a % of Income		/CWT EQ	As a % of Allocated Cost	As a % of Income
U. S. Average Milk Price	\$13.60		100.00%	U. S. Average Milk Price	\$13.60		100.00%
Cash Expenses				Cash Expenses			
Breeding Fees	\$0.15	1.35%	1.10%	Total Allocated Cost	\$11.13	100.00%	81.78%
Car and Truck Expense	\$0.03	0.23%	0.19%	(Basic + Non-basic)			
Chemicals	\$0.09	0.77%	0.63%	Total Basic Cost	\$8.25	74.12%	60.64%
Custom Hire (Machine Work)	\$0.35	3.11%	2.54%	Feed Purchase	\$3.01	27.08%	22.16%
Custom Heifer Raising	\$0.00	0.04%	0.03%	Total Non-basic Cost	\$2.88	25.84%	21.14%
Feed Purchase	\$3.01	27.08%	22.16%	Depreciation: Non-livestock	\$1.21	10.89%	8.91%
Fertilizer and Lime	\$0.30	2.70%	2.21%	Total Paid Labor	\$1.04	9.38%	7.67%
Freight and Trucking	\$0.09	0.81%	0.66%	Total Non-Dependent Labor	\$1.01	9.04%	7.39%
Gasoline, Fuel, and Oil	\$0.29	2.64%	2.16%	Repairs all	\$0.84	7.31%	5.98%
Farm Insurance	\$0.19	1.71%	1.40%	Total Interest Cost	\$0.62	5.57%	4.56%
Marketing & Hedging	\$0.43	3.88%	3.18%	Marketing & Hedging	\$0.43	3.88%	3.18%
Rent/Lease Equipment	\$0.04	0.38%	0.31%	Custom Hire (Machine Work)	\$0.35	3.11%	2.54%
Rent/Lease Other	\$0.27	2.39%	1.96%	Supplies Purchased	\$0.34	3.02%	2.47%
Repairs all	\$0.84	7.31%	5.98%	Utilities	\$0.32	2.91%	2.38%
Seeds and Plants Purchased	\$0.16	1.44%	1.18%	Fertilizer and Lime	\$0.30	2.70%	2.21%
Supplies Purchased	\$0.34	3.02%	2.47%	Veterinary Fees and Medicine	\$0.30	2.70%	2.21%
Taxes - Other	\$0.23	2.07%	1.69%	Gasoline, Fuel, and Oil	\$0.29	2.64%	2.16%
Utilities	\$0.32	2.91%	2.38%	Other Farm Expenses	\$0.29	2.62%	2.15%
Veterinary Fees and Medicine	\$0.30	2.70%	2.21%	Rent/Lease Other	\$0.27	2.39%	1.96%
Other Farm Expenses	\$0.29	2.62%	2.15%	Taxes - Other	\$0.23	2.07%	1.69%
Other Crop Expenses	\$0.01	0.05%	0.04%	Farm Insurance	\$0.19	1.71%	1.40%
Other Livestock Expenses	\$0.07	0.65%	0.53%	Seeds and Plants Purchased	\$0.16	1.44%	1.18%
Depreciation: Livestock	\$0.09	0.77%	0.63%	Breeding Fees	\$0.15	1.35%	1.10%
Total Basic Cost	\$8.25	74.12%	60.64%	Freight and Trucking	\$0.09	0.84%	0.69%
Total Interest Cost	\$0.62	5.57%	4.56%	Chemicals	\$0.09	0.77%	0.63%
Total Dependent Labor	\$0.04	0.36%	0.29%	Depreciation: Livestock	\$0.09	0.77%	0.63%
Total Non-Dependent Labor	\$1.01	9.07%	7.42%	Other Livestock Expenses	\$0.07	0.65%	0.53%
Total Paid Labor	\$1.04	9.34%	7.64%	Rent/Lease Equipment	\$0.04	0.38%	0.31%
Depreciation: Non-livestock	\$1.21	10.87%	8.89%	Total Dependent Labor	\$0.04	0.34%	0.28%
Total Non-basic Cost	\$2.88	25.88%	21.17%	Car and Truck Expense	\$0.03	0.23%	0.19%
Total Allocated Cost	\$11.13	100.00%	81.78%	Other Crop Expenses	\$0.01	0.05%	0.04%
(Basic + Non-basic)				Custom Heifer Raising	\$0.00	0.04%	0.03%
Unpaid Labor/Management	\$1.96	17.61%	14.41%				
Interest On Equity	\$1.40	12.58%	10.29%				
Total Opportunity Cost	\$3.37	30.28%	24.77%				
Total Cost	\$14.49	130.19%	106.51%				
Total Income Minus Total Cost	-\$0.89						
Net Farm Income from Operations (NFIFO)	\$2.69	24.17%	19.77%				
Gain (Loss) on Sale of All Farm Assets	\$0.12	1.08%	0.88%				
Net Farm Income (NFI)	\$2.60	23.36%	19.11%				

XIX. 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 were 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 Normandie.
- 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 was included in the mixed breed category.

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

In 2004, 61 of the herds were identified as Holstein. Of the 40 that were not identified as Holstein, 30 were mixed, 5 were Jersey, 4 were crossbred, and one was Brown Swiss.

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 (other than Holstein) was found as the predominant breed in 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 29 observations in 2004, 28 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, several of the mixed herds are between 50 and 84% Holstein. One herd was 75% Ayrshire. Most 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. The mixed group data was shown in the table in the third year report. While

not shown in later reports, the relative performance of the mixed group was similar to the performance of the non-Holstein group as shown in Graph 7-1.

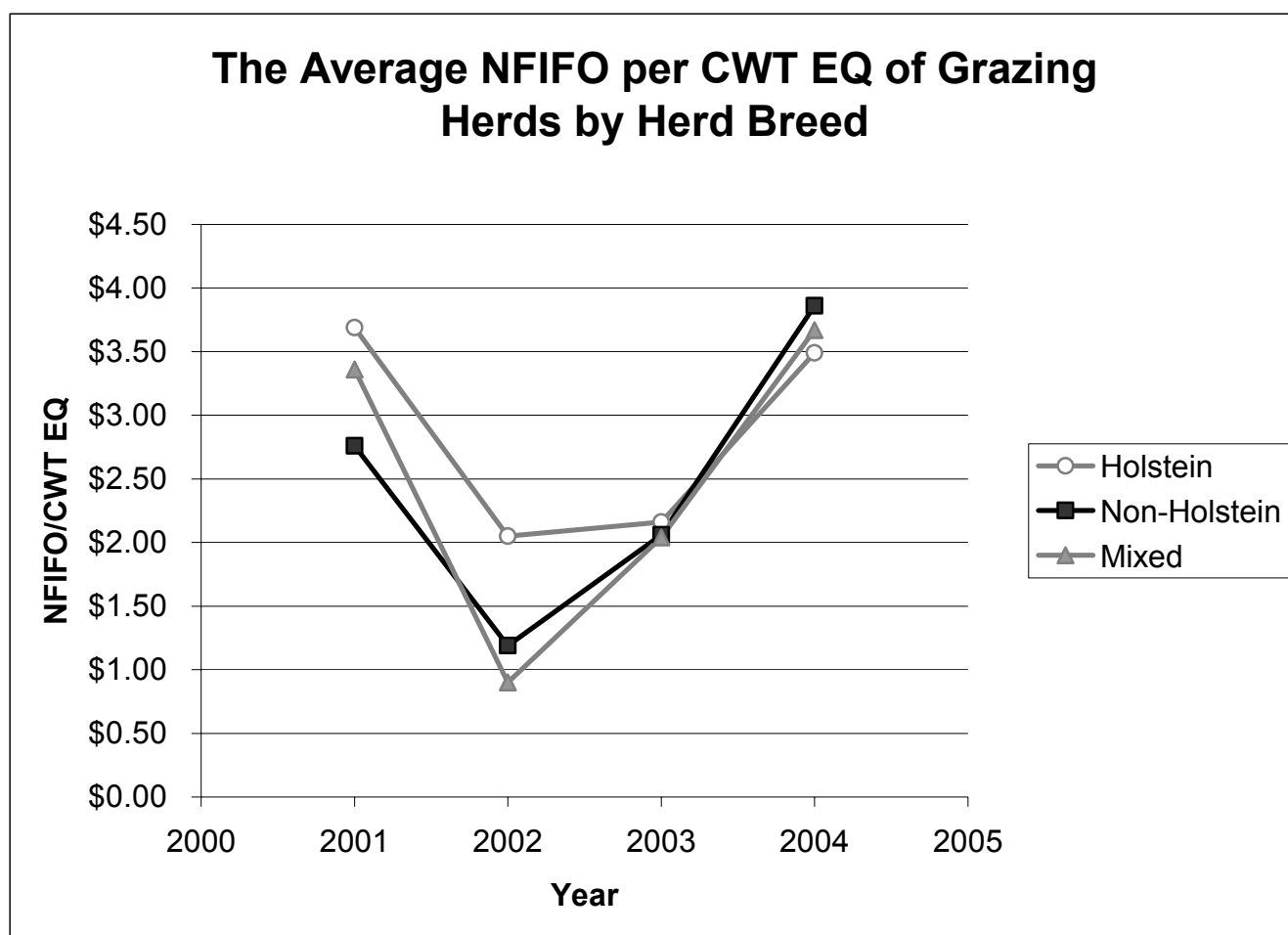
In 2004, for the first time in four years, the non-Holstein herds had an advantage over the Holstein herds in NFIFO per CWT EQ.

In 2003, 2002, and 2001, the herds with 85% or more Holsteins had noticeably higher NFIFO per cow and NFIFO per CWT EQ levels than the non-Holstein herds. The Holstein advantage was larger with the NFIFO per cow measure than when measured by NFIFO per CWT EQ. This is contrary to a fairly common belief that 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.

Graph 7-1 and table 7-1 use selected measures to compare the performance of Holstein, Non-Holstein, and mixed herds.

Graph 7-1



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

Table 7-1								
Performance Measures Selected from the Average Performance of Grazing Farms From Many States by Herd Breed								
	Holstein				Non-Holstein			
	2001	2002	2003	2004	2001	2002	2003	2004
Number of Herds	70	63	61	61	54	40	41	40
Number of Cows per Herd	74**	74**	72	78	97	105	111	116
Average Lbs. Milk per Cow	16,817	17,277	17,187	17,523	14,093	13,165	13,649	13,760
Average Lbs. Milk per Herd	1,247,371	1,280,295	1,229,971	1,374,954	1,371,647	1,378,691	1,515,252	1,595,087
Group Average Mailbox Milk Price	\$16.17	\$13.92	\$15.24	\$17.42	\$16.54	\$13.46	\$15.19	\$18.02
U.S. All Milk Price (used in calculating CWT EQ)*	\$14.94	\$12.15	\$12.50	\$16.10	\$14.94	\$12.15	\$12.50	\$16.10
Average Basic Cost per CWT EQ	\$8.30	\$7.36	\$7.68	\$9.33	\$8.89	\$8.29	\$7.98	\$9.31
Allocated Cost per CWT EQ	\$11.25	\$10.10	\$10.34	\$12.61	\$12.18	\$10.96	\$10.44	\$12.24
Non-Basic Cost per CWT EQ (Allocated Minus Basic)	\$2.95	\$2.74	\$2.66	\$3.28	\$3.29	\$2.67	\$2.46	\$2.93
NFIFO per Cow (if all labor was unpaid)	\$982	\$792	\$767	\$1,043	\$758	\$428	\$578	\$918
NFIFO per CWT EQ (if all labor was unpaid)	\$4.69	\$3.18	\$3.24	\$4.61	\$4.05	\$2.25	\$2.90	\$4.89
NFIFO per Farm	\$57,199	\$37,812	\$36,823	\$61,954	\$50,201	\$13,759	\$45,560	\$84,014
NFIFO per Cow	\$771	\$510	\$515	\$790	\$515	\$227	\$410	\$725
NFIFO per CWT EQ	\$3.69	\$2.05	\$2.16	\$3.49	\$2.76	\$1.19	\$2.06	\$3.86
**By coincidence both herd sizes are equal								

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

XX. 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 are scarce.

2004 data were collected from 13 herds selling all of their milk to an organic market. One each was from New York and Ontario and eleven were from Wisconsin. 2003 data were collected from eleven herds selling all of their milk to an organic market. One each was from New York and Ontario each and nine were from Wisconsin. Data were collected from nine herds selling all of their milk to an organic market in 2002, ten in 2001 and six in 2000. Six were from Wisconsin and three from New York in 2002 versus six and four in 2001. All six organic herds in 2000 were from Wisconsin. The number not practicing MIRG were three in 2004, two in 2003, three in 2002 and 2001, and four in 2000. Seasonal calving was practiced by two herds in 2004 and 2003 and one 2002. 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 2004, 2003 and 2000 organic data are dominated by Wisconsin. New York and Wisconsin had about an equal influence in 2002 and 2001. Wisconsin had more farms in each year but the largest average size of the New York farms provided a “balance.” Since the Wisconsin and New York financial performance is fairly similar in 2003, state-to-state differences may not distort the organic data much in 2001 to 2004.

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

The average organic dairy farm that submitted data in 2004 was smaller, sold slightly fewer pounds of milk per cow and per farm than the average grazing herd in 2004 and 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.

The average organic milk price was \$20.79 compared to \$15.68 for the average grazer in 2004, \$20.42 compared to \$15.22 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).
- 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 CWT EQ

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 Income¹	\$12,143	_____
3.	Change² in Feed Inventory	-\$4,127	_____
4.	Change² 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 Price³ Use \$16.10 when calculating 2003 cost of production.	\$12.86	_____
8.	Hundredweight Equivalents (CWT EQ) of Milk Produced Critical Value ⁴ (On this worksheet, divide line 6 by line 7)	\$11,250	_____
9.	Total Schedule F Expenses (Schedule F, line 35)	\$122,521	_____
10.	Change² in Accounts Payable	\$1,543	_____
11.	Change² 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 EQ⁵ (On this worksheet, line 16 divided by line 8)	\$7.68	_____ Goal <= \$8.00
18.	Total \$'s available for other costs⁶ (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 costs⁷ (On this worksheet, (line 7 minus line 20) times line 8)	\$21,825	_____
22.	Unpaid labor & management charge per CWT EQ \$1.98 (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.)		_____
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

- ¹When 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.

- ²Change 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.

- ³If 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, \$12.50, and \$16.10 in 1990 - 2004, 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.

- ⁴The 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.

- ⁵The 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, \$7.70, and \$9.57 in 1992-2004, 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.

- ⁶The "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.

- ⁷Unallocated 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 calving 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; 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.*