DAIRY FARM BUSINESS SUMMARY

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# INTENSIVE GRAZING FARMS NEW YORK 2010


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**Intensive Grazing Farms**
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# 2010 DAIRY FARM BUSINESS SUMMARY
# INTENSIVE GRAZING FARMS

## INTRODUCTION

Dairy farm managers throughout New York State have been participating in Cornell Cooperative Extension's farm business summary and analysis program since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of the farm business.

The farms included in the study are a subset of New York State farms participating in the Dairy Farm Business Summary and Analysis Program (DFBS). Twenty-seven New York farms indicated that they grazed dairy cows at least three months, moving to a fresh paddock at least every three days and more than 30 percent of the forage consumed during the growing season was from grazing. Operators of these 27 farms were asked to complete a grazing practices survey. Eighteen of the farms did complete it. T**he study centered on 27 New York farms which were not organic farms and were not first year grazers. Throughout the study, the grazing dairies are compared to the "Non-Grazers", which are 72 farms with similar herd size to the 27 grazing farms.**

### Program Objective

The primary objective of the Dairy Farm Business Summary (DFBS) is to help farm managers improve the business and financial management of their business through appropriate use of historical farm data and the application of modern farm business analysis techniques. This information can also be used to establish goals that will enable the business to better meet its objectives. In short, DFBS provides business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

### Format Features

The first section compares intensive grazing farms that participated in the Dairy Farm Business Summary (DFBS) Project in 2009 and 2010. A ten-year comparison is also included this year. The second section of this publication reports data from the grazing practices survey. A comparison of intensive grazing farms with non-grazing farms is included on page 11. The third section, Case Studies, describes two grazing farms. The fourth section summarizes grazing farms by herd size.

The summary and analysis portion of this report follows the same general format as in the 2010 DFBS individual farm report received by all participating dairy farmers. It may be used by any dairy farm manager who wants to compare his or her business with the average data of intensive grazing farms. Non-DFBS participants can download a DFBS Data Check-In Form at http://dfbs.cornell.edu . After collecting data on the form, it can be entered in the U.S. Top Dairies business summary program at the same website to obtain a summary of their business.

The summary and analysis portion of the report features:

(1) an income statement including accrual adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation,

(2) a complete balance sheet with analytical ratios;

(3) a statement of owner equity which shows the sources of the change in owner equity during the year;

(4) a cash flow statement and debt repayment ability analysis;

(5) an analysis of crop acreage, yields, and expenses;

(6) an analysis of dairy livestock numbers, production, and expenses; and

(7) a capital and labor efficiency analysis.

## PROGRESS OF THE FARM BUSINESS

Comparing your business with average financial data can be helpful in analyzing performance[1] and establishing goals for your business. It is equally important for you to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future. Please refer to the table on page 3 for selected factors from 23 farms that were grazing in both 2009 and 2010 and participated in the Dairy Farm Business Summary (DFBS) Project for both years.

The major factor impacting farm profitability in 2010 was the increase in the price of milk. The net milk price was $12.75 per hundredweight in 2009 and $16.99 in 2010, a 33 percent increase. This gave grazers an opportunity to pay down operating debt that was taken on in 2009, to catch up with inputs that were deferred, or to invest in the farm. Operating debt was lowered by $3,110 and there was $34,154 in capital purchases.

These 23 farms increased in herd size from 101 cows in 2009 to 107 cows in 2010 but the number of heifers decreased by one to 87. The total pounds of milk sold per farm increased over 7 percent as cow numbers increased and production per cow grew 221 pounds from 16,439 in 2009 to 16,660 in 2010.

Worker equivalents remained essentially unchanged but with the increase in cow numbers, cows per worker equivalent increased from 35 to 37. Pounds of milk sold per worker equivalent increased 48,393 pounds to 622,670 pounds per worker. Labor and machinery costs per cow decreased 2.6 percent from $1,442 to $1,405.

2010 was an excellent growing season for most of New York State as it was warm and the rains came at the right time. Overall pasture conditions were good throughout the summer. Corn for silage yield increased from 18 to 19.2 and hay yield was unchanged at 2.4 tons per acre.

The total amount of investment per farm remained nearly the same, thus the per cow investment decreased from 2009's value of $9,163 to $8,803 in 2010. Debt per cow in 2009 was $2,076 and in 2010 it was $1,923. Farm net worth increased from $706,309 to $752,886.

On a per cow basis, milk income increased $748 per cow while expenses only increased $136 per cow. This resulted in an increase in profitability from a net farm income per cow (without appreciation) in 2009 of $9 to $499 in 2010.

The above factors, when combined, resulted in higher profitability for 2010.

### Profitability Measures

- Net farm income without appreciation increased from $928 to $53,143.
- Net farm income per cow without appreciation increased from $9 to $499.
- Net farm income with appreciation increased from $2,258 to $72,969.
- Labor and management income per operator/manager increased from negative $30,961 to $5,909.
- Rate of return on equity capital with appreciation increased from negative 7.8 percent to 2.4 percent.
- Rate of return on all capital with appreciation increased from negative 5.0 percent to 3.0 percent.

For both grazers and conventional farms, the year 2010 was a good year for dairy farmers. The 23 grazing farms and the 64 conventional farms with similar herd size as grazing farms, which participated in the DFBS the past two years, both had a net farm income without appreciation of $499 per cow (please see pages 38 and 39).

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[1] **The importance of trend analysis is to identify what areas changed, ask why they changed, and look at what you can do differently in the future to influence that change. If you would like help in developing and looking at the trends in your business, contact your local Cornell Cooperative Extension office and become involved in a financial management education program.**

**PROGRESS OF THE FARM BUSINESS**

Same 23 Grazing Dairy Farms, 2009 & 2010

| Selected Factors | Average of 23 Farms 2009 | Average of 23 Farms 2010 | Percent Change |
|---|---|---|---|
| Size of Business | | | |
| Average number of cows | 101 | 107 | 5.9 |
| Average number of heifers | 88 | 87 | -1.1 |
| Milk sold, lbs. | 1,653,919 | 1,774,611 | 7.3 |
| Worker equivalent | 2.88 | 2.85 | -1.0 |
| Total nontillable and tillable pasture & hay acres | 260 | 284 | 9.2 |
| Total nontillable pasture & tillable acres | 312 | 327 | 4.8 |
| Rates of Production | | | |
| Milk sold per cow, lbs. | 16,439 | 16,660 | 1.3 |
| Hay DM per acre, tons | 2.4 | 2.4 | 0.0 |
| Corn silage per acre, tons | 18.0 | 19.2 | 6.7 |
| Stocking rate | 3.06 | 3.02 | -1.3 |
| Labor Efficiency & Costs | | | |
| Cows per worker | 35 | 37 | 5.7 |
| Milk sold per worker, lbs. | 574,277 | 622,670 | 8.4 |
| Hired labor cost per cwt. | $1.44 | $1.41 | -2.1 |
| Hired labor cost per worker | $25,676 | $24,177 | -5.8 |
| Hired labor cost as % of milk sales | 10.5% | 7.8% | -25.7 |
| Cost Control | | | |
| Grain & concentrate purchased as % of milk sales | 35% | 28% | -20.0 |
| Grain & concentrate per cwt. milk | $4.79 | $5.06 | 5.6 |
| Dairy feed & crop expense per cwt. milk | $6.55 | $6.73 | 2.7 |
| Labor & machinery costs per cow | $1,442 | $1,405 | -2.6 |
| Total farm operating costs per cwt. sold | $15.37 | $15.91 | 3.5 |
| Interest costs per cwt. milk | $0.59 | $0.57 | -3.4 |
| Milk marketing costs per cwt. milk sold | $1.01 | $1.09 | 7.9 |
| Fertilizer and lime expense per cwt. milk sold | $0.58 | $0.55 | -5.2 |
| Operating cost of producing cwt. of milk | $11.85 | $13.22 | 11.6 |
| Total costs of producing cwt. of milk | $19.37 | $20.19 | 4.2 |
| Capital Efficiency (average for the year) | | | |
| Farm capital per cow | $9,163 | $8,803 | -3.9 |
| Machinery & equipment per cow | $1,906 | $1,830 | -4.0 |
| Asset turnover ratio | 0.31 | 0.42 | 35.5 |
| Income Generation | | | |
| Gross milk sales per cow | $2,263 | $3,011 | 33.1 |
| Gross milk sales per cwt. | $13.77 | $18.07 | 31.2 |
| Net milk sales per cwt. | $12.75 | $16.99 | 33.3 |
| Dairy cattle sales per cow | $233 | $279 | 19.7 |
| Dairy calf sales per cow | $15 | $24 | 60.0 |
| Government receipts per cwt. | $1.53 | $0.32 | -79.1 |
| Profitability | | | |
| Net farm income without appreciation | $928 | $53,143 | 5,627 |
| Net farm income per cow without appreciation | $9 | $499 | 5,444 |
| Net farm income with appreciation | $2,258 | $72,969 | 3,132 |
| Labor & mgt. income per operator/manager | $-30,961 | $5,909 | 119.1 |
| Labor & mgt. income per oper./manager per cow | $-307 | $55 | 118.0 |
| Rate of return on equity capital without apprec. | -8.0% | -0.3% | 96.3 |
| Rate of return on all capital without appreciation | -5.1% | 0.8% | 115.7 |
| Financial Summary | | | |
| Farm net worth, end year | $706,309 | $752,886 | 6.6 |
| Debt to asset ratio | 0.23 | 0.21 | -8.7 |
| Farm debt per cow | $2,076 | $1,923 | -7.4 |

**TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS**
**New York Intensive Grazing Dairy Farms, 2001 to 2010**

| Item | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of farms | 54 | 30 | 27 | 30 | 42 | 42 | 36 | 31 | 27 | 27 |
| Cropping Program | | | | | | | | | | |
| Total tillable acres | 288 | 243 | 270 | 267 | 264 | 254 | 273 | 317 | 333 | 299 |
| Tillable acres rented | 142 | 125 | 126 | 96 | 110 | 145 | 132 | 159 | 146 | 121 |
| Hay crop acres | 152 | 119 | 149 | 133 | 143 | 145 | 162 | 176 | 186 | 187 |
| Corn silage acres | 37 | 22 | 28 | 38 | 34 | 41 | 39 | 47 | 51 | 29 |
| Hay crop, tons DM/acre | 2.2 | 2.2 | 3.7 | 2.9 | 1.9 | 2.2 | 2.0 | 2.3 | 2.2 | 2.2 |
| Corn silage, tons/acre | 15.5 | 12.4 | 15.3 | 15.3 | 14.9 | 15.5 | 17.6 | 16.9 | 15.6 | 19.7 |
| Fertilizer & lime exp./tillable acre | $22 | $30 | $21 | $31 | $31 | $29 | $45 | $52 | $41 | $55 |
| Machinery cost/cow | $528 | $439 | $447 | $598 | $586 | $590 | $688 | $739 | $567 | $590 |
| Dairy Analysis | | | | | | | | | | |
| Number of cows | 94 | 94 | 100 | 104 | 95 | 101 | 110 | 127 | 144 | 134 |
| Number of heifers | 70 | 68 | 72 | 74 | 76 | 83 | 87 | 97 | 118 | 100 |
| Milk sold, cwt. | 15,396 | 15,687 | 15,637 | 17,744 | 15,868 | 17,168 | 18,243 | 21,111 | 22,862 | 20,483 |
| Milk sold/cow, lbs. | 16,295 | 16,618 | 15,684 | 17,144 | 16,783 | 17,054 | 16,627 | 16,593 | 15,884 | 15,231 |
| Purchased dairy feed/cwt. milk | $4.19 | $4.21 | $4.45 | $4.76 | $4.48 | $4.41 | $5.46 | $6.77 | $5.52 | $5.68 |
| Purchased grain & concentrate as % of milk receipts | 23% | 28% | 29% | 25% | 26% | 30% | 23% | 31% | 35% | 30% |
| Purchased feed & crop exp/cwt.milk | $4.94 | $4.99 | $5.06 | $5.55 | $5.34 | $5.30 | $6.59 | $8.14 | $6.66 | $6.82 |
| Operating cost producing milk/cwt. | $11.71 | $9.76 | $9.53 | $11.83 | $11.35 | $10.58 | $13.56 | $14.84 | $12.39 | $12.73 |
| Veterinary & medicine exp./cow | $67 | $57 | $59 | $74 | $67 | $83 | $85 | $88 | $64 | $59 |
| Capital Efficiency | | | | | | | | | | |
| Farm capital/cow | $6,841 | $5,870 | $6,286 | $7,300 | $7,526 | $7,667 | $8,158 | $8,244 | $8,314 | $8,316 |
| Real estate/cow | $2,951 | $2,389 | $2,738 | $3,475 | $3,369 | $3,249 | $3,445 | $3,382 | $3,723 | $3,988 |
| Machinery investment/cow | $1,319 | $1,109 | $1,191 | $1,287 | $1,337 | $1,289 | $1,474 | $1,504 | $1,418 | $1,436 |
| Asset turnover ratio | 0.51 | 0.46 | 0.46 | 0.50 | 0.48 | 0.42 | 0.54 | 0.48 | 0.34 | 0.43 |
| Labor Efficiency | | | | | | | | | | |
| Worker equivalent | 2.78 | 2.59 | 2.71 | 2.90 | 2.70 | 2.80 | 2.70 | 2.91 | 3.22 | 2.97 |
| Operator/manager equivalent | 1.40 | 1.24 | 1.36 | 1.50 | 1.32 | 1.39 | 1.28 | 1.35 | 1.49 | 1.29 |
| Milk sold/worker, lbs. | 553,819 | 605,677 | 577,020 | 611,862 | 587,165 | 614,066 | 675,657 | 726,309 | 709,259 | 689,664 |
| Cows/worker | 34 | 36 | 37 | 36 | 35 | 36 | 41 | 44 | 45 | 45 |
| Labor cost/cow | $717 | $683 | $681 | $732 | $746 | $744 | $705 | $711 | $674 | $616 |
| Hired labor exp./hired worker equiv. | $24,430 | $24,009 | $22,912 | $25,966 | $25,645 | $26,504 | $28,417 | $32,729 | $30,266 | $26,493 |
| Profitability & Financial Analysis | | | | | | | | | | |
| Labor & mgmt. income/operator | $15,205 | $2,482 | $9,638 | $22,397 | $17,801 | $1,606 | $54,684 | $19,786 | $-34,934 | $22,765 |
| Labor &mgmt income/operator/cow | $162 | $26 | $96 | $215 | $187 | $16 | $498 | $156 | $-243 | $170 |
| Net farm income/cow w/o apprec. | $555 | $322 | $449 | $652 | $572 | $383 | $1,019 | $568 | $-6 | $574 |
| Farm net worth, end year | $477,037 | $369,123 | $454,465 | $578,704 | $535,182 | $584,266 | $706,999 | $765,083 | $830,593 | $841,683 |
| Percent equity | 71% | 66% | 69% | 73% | 72% | 74% | 73% | 71% | 70% | 73% |

## MYTHS OF GRAZING

Since 1996 Cornell's Agricultural Economics and Management has collected Dairy Farm Business Summary information from grazing dairies. Professor George Conneman has participated with the project since that time. Over the years he has suggested to dairy farmers the possibility of converting their farm to a grazing farm. The responses he has received were sometimes legitimate and some were, as he called them, "The Myths of Grazing". Below are the list of myths and their appropriate responses.

| MYTHS OF GRAZING | TRUTHS OF GRAZING |
|---|---|
| A high level of milk production per cow is not important for success of a Management Intensive Grazing (MIG) dairy. | True and False--As with confinement herds, production per cow is important, but more important for grazing herd's success is lowering the cost of production per hundredweight. |
| Grazing is the last thing a dairy farmer does before calling the auctioneer. | It is true that many grazing dairy farmers arrived at grazing through economic hard times, but this is due more to the inability of farmers to change without feeling economic pain. Many have found success once they decided to change. |
| A lower set of skills is required to make intensive grazing work. | Grazing dairies have all the same management issues that confinement herds have with the addition of keeping adequate amounts of pastures through seasons that vary. Management areas such as crop production, herd health, and labor are less stressful due to the adoption of grazing. |
| MIG is impractical for herds of greater than 100 cows. | There are many 300+ cow grazing herds, with the maximum in New York around 600 cows. The limiting factor is usually the amount of pasture needed close to the milking area since the cows need to walk for milking twice a day. |
| Machinery and feed costs are significantly lower on MIG farms. | The grazing season in New York is only 4-5 months long; this requires the farm to produce the same as a confinement herd the rest of the year. The machinery is doing less acreage per year which will reduce repairs and replacement costs. Substituting pasture for haylage in the cow's diet is beneficial due to the nutrient density of pasture. |
| Putting the cows out to pasture means that the farmer will spend more time chasing escaped cows and fixing fence. | Over the past 20 years new fencing technologies (mostly from New Zealand) have removed this fear. Many Soil and Water Districts have offered grants to pay for installing these systems. |
| It only takes grazing skills to make MIG work on dairies. | As stated earlier, a grazing dairy farmer has the same areas of management to deal with. Their grazing ability is important to make the system work but bottom line is they still operate as a confinement dairy 6-7 months a year. |

## INTENSIVE GRAZING SURVEY SUMMARY

From the survey data of the 18 selected grazing farms that completed the grazing practices survey, analysis of average production levels and profitability measures are shown below. Labor and management income per operator per cow without appreciation was used to evaluate whether certain practices contributed favorably to improved profitability. Labor and management income per operator per cow is a measure of the net annual return after the operators' unpaid family labor and an equity charge for capital used in the business has been applied. This is one of the ways to compare diverse businesses that have high debt to those with no debt and those that may rely heavily on unpaid labor with those that have all paid labor. The farms were divided into two groups comprised of the top 50 percent and the lower 50 percent scaled from the highest to lowest labor and management income per operator per cow.

### SELECTED PRODUCTION AND PROFITABILITY MEASURES

Intensive Grazing Dairy Farms, 2010

| | Average (18 farms) | Average of the Top 50% (9 farms) | Average of the Lower 50% (9 farms) |
|---|---|---|---|
| Labor and management income per operator per cow | $282 | $494 | $-69 |
| Average number of cows | 179 | 212 | 146 |
| Milk sold per cow, pounds | 13,839 | 13,611 | 14,170 |
| Operating cost of producing milk per cwt. | $12.86 | $12.21 | $13.76 |
| Total cost of producing milk per cwt. | $18.84 | $17.50 | $20.72 |

Comparison of survey data on the various grazing practices, such as water availability, supplemental feeding, pasture species, pasture management, milking system type and frequency of rotation are shown as follows:

### GRAZING PRACTICES

Intensive Grazing Dairy Farms, 2010

| | Number of Farms Responding | Average of All Farms Answering Question | Average of the Top 50% | Average of the Lower 50% |
|---|---|---|---|---|
| Experience | | | | |
| Average years of farming experience | 18 | 27 | 25 | 29 |
| Average years of grazing experience | 18 | 12 | 9 | 15 |
| Farm Characteristics | | | | |
| Stopped milking cows, number of days | 3 | 58 days | 45 days | 65 days |
| Percent of farms with a parlor milking system | 18 | 44% | 44% | 44% |
| Pasture in the Ration | | | | |
| Average percent forage from pasture | 18 | 49% | 51% | 47% |
| Average length (days) of grazing season | 18 | 142 days | 142 days | 141 days |
| Average pounds of grain fed while grazing | 11 | 9.2 | 9.0 | 9.3 |
| Average pounds of grain fed in winter | 11 | 13.2 | 13.3 | 13.1 |
| Average pounds of forage dry matter fed while grazing | 11 | 11.5 | 10.5 | 12.3 |
| Average pounds of forage dry matter from grazing | 12 | 20.7 | 24.2 | 18.1 |
| Average pounds of forage dry matter fed in winter | 12 | 26.9 | 30.2 | 24.5 |
| Pasture Management | | | | |
| Percent rotated after each milking | 18 | 44% | 33% | 56% |
| Percent rotated daily | 18 | 33% | 33% | 33% |
| Percent rotated every other day | 18 | 11% | 22% | 0% |
| Percent other rotation | 18 | 11% | 11% | 11% |
| Percent applied commercial fertilizer to pasture | 18 | 39% | 67% | 11% |
| Percent applied manure to pasture | 17 | 53% | 63% | 44% |
| Percent applied lime to pasture | 18 | 44% | 56% | 33% |
| Percent that clipped pasture | 18 | 78% | 78% | 78% |
| Percent with a weed problem | 18 | 56% | 44% | 67% |
| Percent with water in every paddock | 18 | 72% | 100% | 44% |
| Percent with pasture re-seeded in past 10 years | 11 | 37% | 46% | 20% |
| Percent that mechanically harvested pastures | 10 | 31% | 26% | 40% |
| Most common pasture species | | | | |
| First | | Orchardgrass | Orchardgrass | Orchardgrass |
| Second | | Bluegrass or Native White Clover | Native white Clover or Ryegrass | Bluegrass |
| Third | | Ladino Clover | Bluegrass | Native White Clover, Ladino Clover, or Red Clover |

Practices to increase pasture quality tended to indicate higher profitability. Those practices included use of commercial fertilizer or manure and re-seeding pasture.

## Breeds

Holstein was the most common breed with seven of the farms having 90 percent or greater Holstein animals. The second most common were Crossbreeds which were on seven farms. Farms with Holstein animals tended to have higher milk production but this year had lower profitability both per cow and per hundredweight.

**FARMS SCALED BY BREED OF HERD**
Intensive Grazing Farms, 2010

| | Number | Pounds Milk Sold Per Cow | Labor & Mgmt. Income per Operator Per Cow | Labor & Mgmt. Income per Operator Per Cwt. | Cull Rate (Sold for Beef or Died) |
|---|---|---|---|---|---|
| Farms that are 90+% Holstein | 7 | 17,715 | $190 | $1.07 | 25% |
| Farms that are less than 90% Holstein | 11 | 12,497 | $323 | $2.59 | 17% |

## Supplemental Feeding

Twelve farms gave detailed ration data and the table below compares the six farms that fed corn silage to the six that did not. Farms that incorporated corn silage into their grazing forages have higher milk production per cow. These farms do not always have higher profitability. In past years, the feeding of corn silage has shown to be profitable some years and unprofitable others, while supplementation of pasture in general has always shown to be a profitable practice. For a more specific look at what was being fed to these grazing herds, see the following section "Grazing Season Ration Details".

**SUPPLEMENTAL FEEDING**
Intensive Grazing Farms, 2010

| | Top 50% (5 farms) | | Lower 50% (7 farms) | |
|---|---|---|---|---|
| | Corn Silage (3) | No Corn Silage (2) | Corn Silage (3) | No Corn Silage (4) |
| Labor & management income per oper. per cow | $413 | $436 | $-193 | $56 |
| Milk sold per cow, pounds | 17,406 | 14,783 | 19,870 | 11,462 |
| Grain fed in summer, pounds dry matter | 10.2 | 5.3 | 6.0 | 11.7 |
| Corn silage fed in summer, pounds dry matter | 7.1 | --- | 8.4 | --- |
| Other forage fed in summer, pounds dry matter | 4.6 | 5.0 | 5.1 | 7.2 |
| Percent forage from pasture | 47% | 55% | 39% | 62% |

## Grazing Season Ration Details

The five farms in the top 50 percent of profitability fed an average of 9.0 pounds dry matter of grain during the grazing season. Three farms fed corn silage at an average of 7.1 pounds dry matter.

The seven farms in the lower 50 percent of profitability fed an average of 9.3 pounds dry matter of grain during the grazing season. Three of the farms fed corn silage at an average of 8.4 pounds dry matter.

**Frequency of Rotation**

Eight of the farms rotated their pastures for milk cows after each milking, six of the farms rotated pasture every day, two farms rotated pasture every other day, and two farms rotated pasture every third day. The table below compares the rotation frequency to milk production and labor and management income per operator per cow.

**ROTATION FREQUENCY**
Intensive Grazing Farms, 2010

| | Top 50% (9 farms) | | Lower 50% (9 farms) | |
|---|---|---|---|---|
| | Rotate At Least Once Per Day (6) | Other Rotation Schedule (3) | Rotate At Least Once Per Day (8) | Other Rotation Schedule (1) |
| Milk sold per cow, pounds | 13,136 | 17,115 | 13,970 | Too Few |
| Labor and management income per operator per cow | $495 | $301 | $-54 | To Report |

**Water Source**

Seven farms provided the majority of water from a well while the remaining eleven provided water from a natural source (pond-6 and spring-5).

**WATER SOURCE**
Intensive Grazing Farms, 2010

| | Top 50% (9 farms) | | Lower 50% (9 farms) | |
|---|---|---|---|---|
| | Well (5) | Other (4) | Well (2) | Other (7) |
| Milk sold per cow, pounds | 12,802 | 18,678 | 12,368 | 15,411 |
| Labor and management income per operator per cow | $470 | $546 | $97 | $-170 |

**Milking System**

Farms utilizing some sort of a parlor (herringbone, parallel, rotary, flat barn or other) were separated from those utilizing a pipeline. The type of milking system may impact the degree of control the manager has over the supplemental feeding system and the capital investment level of the farm. In total there were 8 pit parlor systems (no flat parlors; 2 other parlors) and the remaining 8 farms used pipeline systems.

**MILKING SYSTEM**
Intensive Grazing Farms, 2010

| | Top 50% (9 farms) | | Lower 50% (9 farms) | |
|---|---|---|---|---|
| | Pipeline (3) | Parlor (6) | Pipeline (5) | Parlor (4) |
| Milk sold per cow, pounds | 18,547 | 13,150 | 17,416 | 13,436 |
| Labor and management income per operator per cow | $604 | $445 | $-495 | $24 |
| Average number of cows | 54 | 291 | 48 | 268 |

**Commercial Fertilizer**

Seven farms applied fertilizer to the paddocks during the growing season. The majority of farms applied urea and others applied a blended fertilizer. It is not possible to compare pasture yields in the different systems because quantities were not measured from farms that mechanically harvested hay from pasture.

**COMMERCIAL FERTILIZER**
Intensive Grazing Farms, 2010

| | Top 50% (9 farms) | | Lower 50% (9 farms) | |
|---|---|---|---|---|
| | Applied Fertilizer (6) | Did Not Apply Fertilizer (3) | Applied Fertilizer (1) | Did Not Apply Fertilizer (8) |
| Milk sold per cow, pounds | 13,158 | 14,918 | Too | 13,992 |
| Labor and management income per operator per cow | $518 | $467 | Few | $-52 |
| Stocking rate, cows per acre | 1.9 | 2.6 | To | 2.5 |
| Percent forage from pasture | 53% | 52% | Report | 51% |
| Most common product applied | Urea | | | |

**Intensive Grazing Satisfaction Comments**

On a scale of 1 to 5, with 5 being the highest, 18 farms responded with the average rating of grazing satisfaction as 4.6 with 12 farms responding 5 (very satisfied), 5 responding 4 (satisfied), and 1 responding 3 (somewhat satisfied). When asked whether their lifestyle has improved with the adoption of rotational grazing, 15 farms responded with "yes".

**Grazing Trends**

The table below compares key figures from 1996 (the first year of the intensive grazing summary), 2010, and a 15-year average (not the same farms all 15 years). Cow numbers have increased but milk sold per cow has decreased slightly in recent years due to participation of farms with mixed breeds. [3] Operating cost of producing milk per hundredweight in 2010 averaged $1.27 above the 15-year average as well as $1.44 above 1996. Net farm income per cow without appreciation was $88 higher in 2010 than the 15-year average.

**2010 GRAZING INFORMATION COMPARED TO 1996 AND 1996 – 2010 AVERAGE**
Intensive Grazing Farms, 1996 – 2010

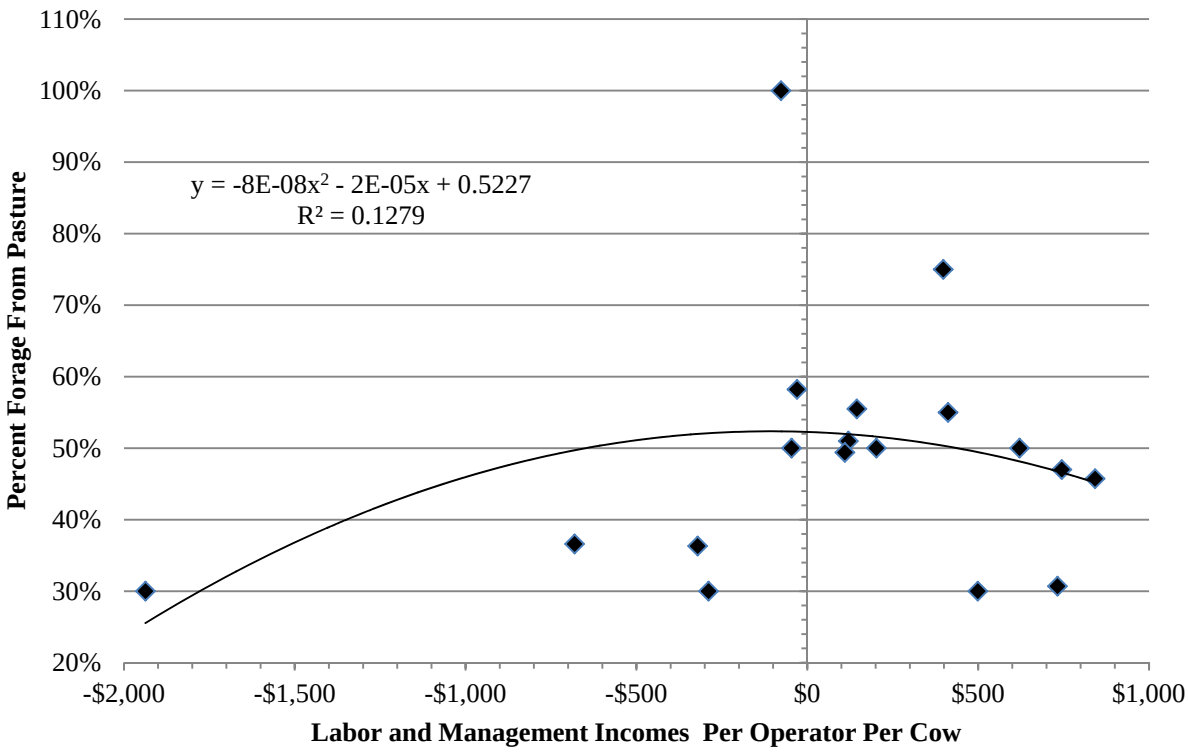
| | 59 Grazing Dairy Farms, 1996 Average | 27 Grazing Dairy Farms, 2010 Average | Grazing Dairy Farms, 1996 – 2010 Average |
|---|---|---|---|
| Number of cows | 78 | 134 | 101 |
| Milk sold per cow, pounds[2] | 17,270 | 15,231 | 16,771 |
| Operating cost of producing milk per cwt. | $11.29 | $12.73 | $11.46 |
| Net farm income per cow without apprec. | $409 | $574 | $486 |
| Grain and concentrate as % of milk receipts | 30% | 30% | 28% |
| Grain and concentrate expense per cwt. milk | $4.41 | $4.87 | $4.21 |
| Price of milk per cwt. | $14.78 | $18.43 | $15.79 |

**[2] In 1996, similar size non-grazers sold 17,547 pounds of milk per cow and in 2010 similar size non-grazers sold 21,697 pounds per cow.**

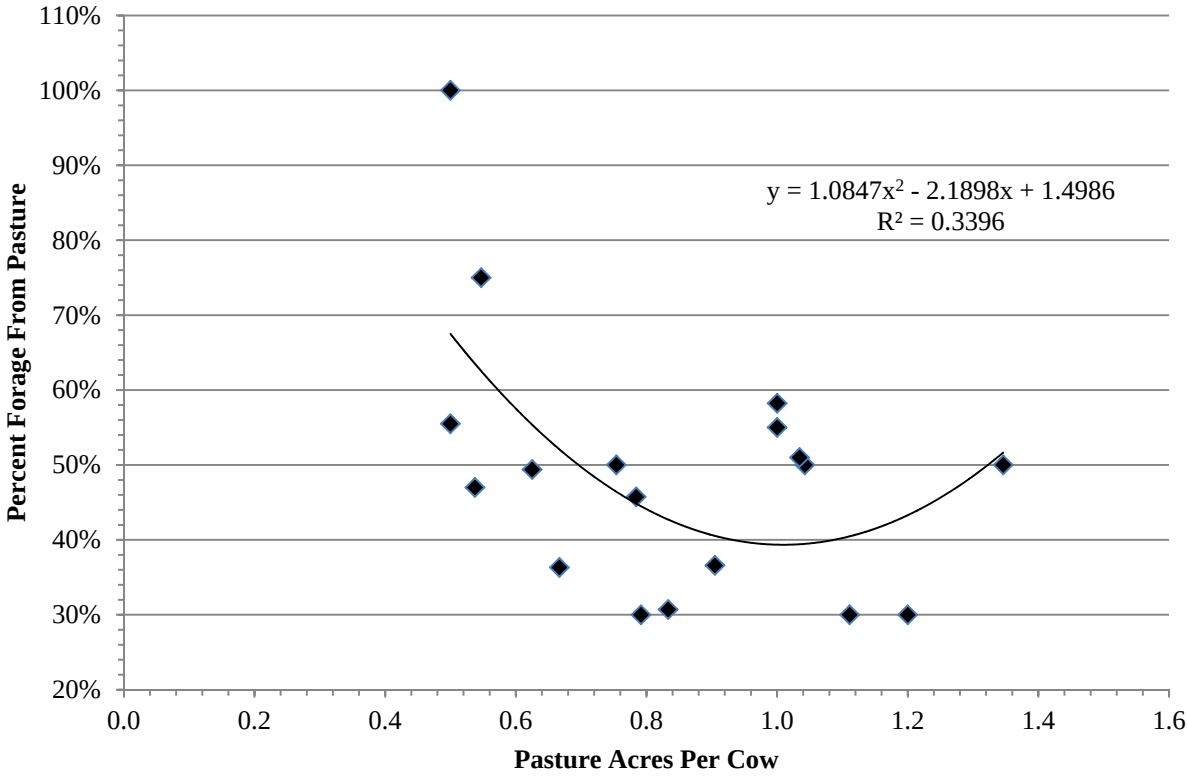
**Percent Forage from Pasture**

The following graphs compare the percent forage from pasture to labor and management incomes per operator per cow and pasture acres per cow.

**PERCENT FORAGE FROM PASTURE VERSUS LABOR AND MANAGEMENT INCOMES PER OPERATOR PER COW**
**Intensive Grazing Farms, 2010**




**PASTURE ACRES PER COW VERSUS PERCENT FORAGE FROM PASTURE**
**Intensive Grazing Farms, 2010**



**INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS**
**New York State Dairy Farms, 2010**

| Item | All Intensive Grazing Farms[3] | Non-Grazing Farms[4] |
|---|---|---|
| Number of farms | 27 | 72 |
| **Business Size & Production** | | |
| Number of cows | 134 | 138 |
| Number of heifers | 100 | 117 |
| Milk sold, pounds | 2,048,302 | 2,989,361 |
| Milk sold per cow, pounds | 15,231 | 21,697 |
| Milk plant test, % butterfat[5] | 4.0% | 3.7% |
| Cull rate | 21% | 33% |
| Tillable acres, total | 299 | 366 |
| Hay crop, tons DM per acre | 2.2 | 2.8 |
| Corn silage, tons per acre | 19.7 | 18.7 |
| Forage dry matter per cow, tons[6] | 4.5 | 8.8 |
| **Labor & Capital Efficiency** | | |
| Worker equivalent | 2.97 | 3.97 |
| Milk sold per worker, pounds | 689,664 | 752,514 |
| Cows per worker | 45 | 35 |
| Farm capital per worker | $376,550 | $383,792 |
| Farm capital per cow | $8,316 | $11,059 |
| Farm capital per cwt. milk | $39 | $36 |
| Machinery and equipment per cow | $1,436 | $2,154 |
| **Milk Production Costs & Returns** | | |
| Selected costs per cwt.: | | |
| Hired labor | $1.62 | $1.88 |
| Grain & concentrate | $4.87 | $5.25 |
| Purchased roughage | $0.80 | $0.44 |
| Replacements purchased | $0.03 | $0.11 |
| Vet & medicine | $0.39 | $0.57 |
| Milk marketing | $1.05 | $0.91 |
| Other dairy expenses | $1.37 | $1.46 |
| Operating cost of producing milk per cwt. | $12.73 | $13.95 |
| Total labor cost per cwt. (hired, family & operator) | $4.04 | $3.99 |
| Owner and operator resources per cwt. | $4.20 | $3.85 |
| Total cost of producing milk per cwt. | $19.29 | $19.29 |
| Average farm price per cwt. | $17.39 | $16.74 |
| **Related Cost Factors** | | |
| Hired labor/cow | $246 | $407 |
| Total labor/cow | $616 | $866 |
| Purchased dairy feed/cow | $865 | $1,235 |
| Purchased grain & concentrate as % of milk receipts | 30% | 30% |
| Veterinary & medicine/cow | $59 | $123 |
| Machinery costs/cow | $590 | $791 |
| Feed & crop expenses/cwt. | $6.82 | $6.73 |
| **Profitability Analysis** | | |
| Net farm income (with appreciation) | $103,591 | $99,146 |
| Net farm income (without appreciation) | $77,240 | $71,665 |
| Net farm income per cow (without appreciation) | $574 | $520 |
| Net farm income per cwt. (without appreciation) | $3.77 | $2.40 |
| Labor & management income per operator | $22,765 | $7,382 |
| Labor & management income per operator per cow | $169 | $53 |
| Rates of return on: | | |
| Equity capital with appreciation | 6.0% | 3.0% |
| All capital with appreciation | 5.6% | 3.4% |

[3]Farms grazing at least three months of year, changing paddock at least every three days, forage from pasture at least 30 percent, and no organic farms.

[4]Farms with similar herd size as the 27 rotational grazing farms.

[5]Average of farms reporting this data.

[6]Average of farms that grow forages.

## CASE STUDIES

### Jeff and Jennifer Miller, Cherry Creek, NY

Jeff and Jennifer Miller and family own and operate their 75 cow dairy farm on 100 acres in Cherry Creek, Chautauqua County, New York. The Millers purchased the farm from Jeff's father in 2005 through a lease-share agreement, but they have operated the farm since 1992. Jeff's father originally had purchased the property for heifer facilities in the 1970's. By 1988, they were milking 25 cows in the tie-stall barn. In 1994 the Millers built a three-row open front freestall to house their cows, but continued to milk in the tie-stall until 2001 when they built a double 5 herringbone parlor.

Although they grazed prior to building the freestall, they automatically fell into a confinement system with their new barn. The Millers commented that after three years of hoof health challenges and the stress of cropping, cleaning, and manure spreading, they were ready for a change. Their inspiration to graze came from a neighboring dairy farmer, who commented that there was an easier way to do things. Jeff and Jennifer began seeding corn ground to grass in 1999 and were able to rotationally graze in 2000 for the first year. They have never looked back and are now inspiration for other beginning grazers.

*Grazing System*

The Millers graze on a total of 60 acres with 45 acres on the main farm divided into 13 paddocks, and rent an additional 15 acres of pasture where they move temporary wires across the field. The cows are moved to a new paddock every milking or at least once a day. They start grazing early in the spring, usually by the 15$^{th}$ of April. Jeff said that he learned from another grazer in the area that this way cows don't tend to binge on the lush green grass that is ready in May. The transition is a little easier on the cows and the Millers simply watch feed refusals closely to determine when to begin decreasing haylage in the ration. They graze until the end of October.

The Millers provide water to every paddock through spring-fed waterers. They also provide some free-choice dry hay. During the winter, the cows are fed a total mixed ration of corn silage, haylage, and grain. The forages are stored in bunk silos, which were built in 1995 and 2009.

Jeff clips the pasture as needed with a Krone disc bine without conditioner rolls. The 12 foot cut swath makes the job easier and cleaner without rows of hay left on the pasture. If the weather is too dry, they'll avoid cutting. The rented pasture was seeded to perennial rye-grass in 2000, and Jeff has recently begun using a broadcast seeder attached to an ATV to re-seed pastures.

*Heifers and Dry Cows*

The Millers do allow dry cows and younger heifers access to pasture, but do not rotationally graze them. They do rotationally graze their older and bred heifers, which are all bull-bred. Their calves are housed in condos during the summer and round winter hutches in the winter. Weaned calves to 6 months are housed in a heifer barn built in 2007 and heifers 6 months to pre-calving are housed in a barn built in 2008.

*Overall Grazing Philosophy*

If you speak with Jeff and Jennifer Miller, you will find that their easy-going approach to grazing works well for them. They watch the cows for signs that the pasture is providing what they need for nutrition, and they watch the pasture for signs that it needs care rather than relying on a set schedule. They make investments at the right time for them, and will often phase their building projects rather than undertaking it all at once. Jeff and Jennifer are full believers that grazing has, in many ways, saved their farm. Their finances are much better now than prior to grazing, and Jeff attributes that to labor and grain cost savings. The cows produce well at a 20,000 pound herd average.

Jeff and Jennifer enjoy attending Pasture Walks, and try to attend at least one or two during the summer. They like to hear what other grazers are doing, and will often share their own experiences with new grazers. They have hosted a Pasture Walk on their farm, and have attended the Southwestern New York Pasture Expo as well as other Cornell Cooperative Extension programs. They have been participating in the Dairy Farm Business Summary since 2005.

Jeff and Jennifer do most of the labor on their farm, but do hire a relief milker for a few milkings a week. They have two children, Andrew who is 14, and Katelyn who is 9 years old. Their children are involved in 4-H and are very active on the farm in caring for the animals.

*Innovations and the Future*

The Millers are considering increasing the herd from 75 cows to 150 cows at some point in the future. They would like to build an addition onto their freestall, expanding their capacity and adding some maternity pens for freshening. Jeff and Jennifer have thought about robotics as a way to add more cows without adding labor. If they were to invest in robotic milkers, they would build a new barn for 2 robots, and continue milking about 40 through the parlor. Whatever investments might come in the future, you can be sure that grazing will be a part of the Millers successful farm business.

**East Hill and Graceland Farms**
Gary and Betty Burley; Holly Burley
Warsaw and Dansville, New York

Gary and Betty Burley started grazing in 1986 with 40 cows. They were in their fifth year of their dairy career. While grazing was extremely successful, Gary felt that to enjoy time with his family and stay competitive in the dairy business, he would have to expand.

In 1991 a flat barn parlor was built in the old tie stall barn. A 200-cow freestall facility was built, and a switch was made over to a confinement feeding system. From 1991 to 1994 the farm grew to 250 cows in a confinement system. While the farm was successful and making progress, due to the intensity of management and labor requirements; Gary missed rotational grazing. He and Betty decided to start switching back to a grazing system in 1994 with the replacements. He felt that rotational grazing and seasonal milk production would fit his preferred management style and allow the farm to at least equal, if not surpass, the profitability of the confinement system. In 1995, the cows were back into a grazing system.

In 1998 Gary and Betty were in their fourth year of creating a seasonal herd and moving toward a lower input system. One of their top goals as the parents of five children was to involve the children in the day to day operation of the business and to spark an interest in dairy farming for their future. By natural attrition, some of the outside hired labor was no longer required. After three years in a homemade double 14 parlor, they spent considerable time in late 1998 planning to build a new swing 40 milking center. In 1999 the farm averaged 232 cows with the new milking parlor (4.32 worker equivalent on a fully seasonal herd). Milk production averaged 14,483 pounds of milk per cow.

In 2001 internal herd growth put the herd at 400 cows with a 4.57 worker equivalent. Cows per worker were now 87.5. The same year a state engineered cattle underpass was constructed under the state highway which bisected the farm. The parlor and the underpass were two key components which the farm needed to grow to the size it is today. In 2011 Gary & Betty had 700 milking cows at East Hill Farm.

*Graceland Farm*

By keeping the operation simple and easy to duplicate, the Burleys were able to set up a second farm in Dansville, NY in 2007 (Graceland). Their daughter, Holly, manages this dairy, which is a separate LLC. She milks 400 cows, artificially inseminates with 300 straws of semen on the milking herd and raises 75 bulls to keep for breeding purposes on both farms. The remaining bull calves are castrated at four months of age and shipped to the Kysorville farm in the Dansville valley to be wintered there and then trucked to a feedlot in Oklahoma for finishing. All female replacements are raised at East Hill Farms in Warsaw.

*Calf Program*

With the continued increase in herd size of both farms and the short calving window of seasonality, the calf program has become a significant part of the business. All calves for both farms are raised at East Hill. For the first 10 days calves are grouped in pens of 15 in the old tie stall barn and are fed on nipple bars. After ten days they are combined into groups of 30 calves, moved to pens in the old freestall barn and other barns and fed on a bar feeder. Cold milk is fed once a day to the different groups. They are weaned between 5 & 6 weeks of age and at 6 weeks are moved out to pasture in groups of 120. A training pen is utilized to train the heifers on electric fence before they go out to the pasture.

In 2011, they started 400 heifer calves, 325 bull calves to castrate for steers and also were raising 350 bred heifers and 75 bulls. They have 320 steers in Oklahoma on feed which are retained ownership and sold as beef. The bulls are used and put on the cows and heifers for breeding. They run a ratio of 15 females to each bull during the breeding season which runs from June 1 to August 15.

*The Future*

This is Gary & Betty's 30th year in the dairy business. At some point they plan to exit from dairy farming. Their children have reached the age where it is time to turn the reins over to the next generation. They feel if they wait too much longer, the children will move on to other opportunities and Gary & Betty will miss their window of the goals they set in 1998. The last five years have probably been some of the best and poorest years economically for the dairy industry but they have been able to make steady economic progress through those years. They have sold off 400 head of replacement livestock in the last two years because stocking rates were maxed out. If this had not been done, another dairy would have had to been set up to accommodate the extra animals. The farm mission statement reads: Enjoyable farming through low stress, high profit and simple systems with minimized labor.

*Children Return*

After 4 ½ years of working construction, their middle son, Ryan, has returned to the home farm in Warsaw, NY and is learning the ropes of management there. Youngest daughter, Diana, is studying Ag Business in college, and contemplating the offer to return home to assist with managing the livestock portion of East Hill Farms. It is a family understanding that each sibling must be away from the farm for a period of at least four years before returning. Gary & Betty feel that it is important for their children to work for someone else, gaining worldly experience. Oldest son, Rollin, is a silent partner in the LLC at the home farm. He is presently serving in the military as a helicopter pilot and is still deciding his career with his wife and child. Youngest son, Kyle, is going to school in Lima, Ohio, studying Ag Mechanics, with the intention of someday running a custom harvesting business.

*Land Ownership*

Both Holly and Ryan own farmland which adjoins the home farm in Warsaw. Gary and Betty rent that land from them and pay a monthly payment to them to cover interest on their mortgages, taxes and fertilizer expenses. Gary & Betty felt this was a good investment for Holly and Ryan to be involved in and it would save land transfer issues in the future. The lease agreements have exit clauses in case family relations become strained at any time.

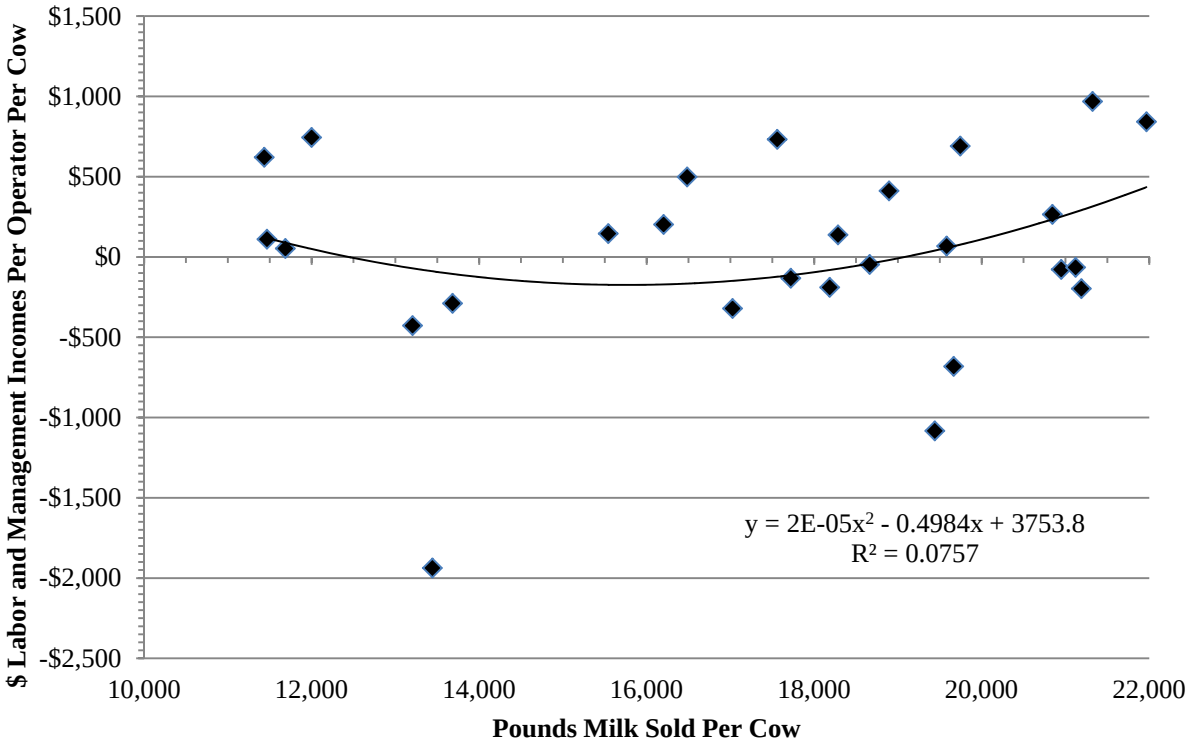
*Conclusion*

Gary and Betty feel that their 27 years of participating in the DFBS has helped them immensely by monitoring their progress and it has given them a strong financial position when working with their banker.

## SUMMARY OF GRAZING FARMS BY HERD SIZE

There were 12 New York grazing farms with more than 100 cows. Herd size does not guarantee profitability, however, as small farms that are able to produce higher levels of milk per cow also show higher levels of profitability. The chart below shows the variation in labor and management income per operator per cow by pounds of milk sold per cow. The table on the following page compares grazing farms by herd size group.

**LABOR AND MANAGEMENT INCOMES PER OPERATOR PER COW AND MILK PER COW**
**27 Intensive Grazing Farms, 2010**



**INTENSIVE GRAZING FARMS BY HERD SIZE GROUP**

27 Intensive Grazing Dairy Farms, 2010

| Item | 55 Cows Or Less | 56 to 129 Cows | 130 Cows Or More |
|---|---|---|---|
| Number of farms | 9 | 8 | 10 |
| Business Size & Production | | | |
| Number of cows | 46 | 76 | 261 |
| Number of heifers | 36 | 62 | 188 |
| Milk sold, lbs. | 852,455 | 1,402,807 | 3,640,960 |
| Milk sold/cow, lbs. | 18,576 | 18,458 | 13,950 |
| Milk plant test, % butterfat (ave. of farms reporting) | 3.7% | 3.9% | 4.0% |
| Cull rate | 29% | 23% | 19% |
| Tillable acres, total | 118 | 216 | 528 |
| Hay crop, tons DM/acre | 1.9 | 2.6 | 2.1 |
| Corn silage, tons/acre | 17.5 | 17.3 | 21.6 |
| Forage tons DM/cow (ave. of farms that grow forage) | 5.4 | 7.2 | 3.8 |
| Labor & Capital Efficiency | | | |
| Worker equivalent | 1.86 | 2.20 | 4.59 |
| Milk sold/worker, lbs. | 457,899 | 638,607 | 793,526 |
| Cows/worker | 25 | 35 | 57 |
| Farm capital/worker | $312,681 | $319,577 | $421,278 |
| Farm capital/cow | $12,674 | $9,251 | $7,409 |
| Farm capital/cwt. milk | $54 | $50 | $53 |
| Milk Production Costs & Returns | | | |
| Selected costs/cwt.: | | | |
| Hired labor | $0.78 | $0.20 | $2.23 |
| Grain & concentrate | 5.57 | 5.46 | 4.55 |
| Purchased roughage | 0.56 | 0.54 | 0.93 |
| Replacements purchased | 0.09 | 0.08 | 0.01 |
| Veterinary & medicine | 0.52 | 0.29 | 0.39 |
| Milk marketing | 1.30 | 1.05 | 0.99 |
| Other dairy expenses | 1.40 | 1.27 | 1.40 |
| Operating cost of producing milk/cwt. | 13.01 | 12.61 | 12.71 |
| Owner/operator resources/cwt. | 7.20 | 4.82 | 3.38 |
| Total labor cost/cwt. | 6.15 | 4.75 | 3.39 |
| Total cost of producing milk/cwt. | 23.02 | 20.20 | 18.22 |
| Average farm price/cwt. | 17.28 | 17.98 | 18.82 |
| Related Cost Factors | | | |
| Hired labor/cow | $144 | $38 | $311 |
| Total labor/cow | 1,142 | 876 | 474 |
| Purchased dairy feed/cow | 1,138 | 1,107 | 765 |
| Purchased grain & concentrate as % of milk receipts | 33% | 31% | 26% |
| Veterinary & medicine/cow | $96 | $53 | $54 |
| Machinery costs/cow | $758 | $696 | $539 |
| Feed & crop expense/cwt. | $6.92 | $6.99 | $6.74 |
| Profitability Analysis | | | |
| Net farm income (without appreciation) | $19,605 | $54,842 | $147,030 |
| Net farm income/cow (without appreciation) | $427 | $722 | $563 |
| Net farm income/cwt. (without appreciation) | $2.30 | $3.91 | $4.04 |
| Labor & management income/operator | $-8,444 | 9,909 | $56,462 |
| Labor & management income/operator/cow | $-184 | $130 | $216 |
| Rates of return on: | | | |
| Equity capital with appreciation | -5.4% | 1.6% | 10.7% |
| All capital with appreciation | -3.2% | 2.4% | 9.0% |

## SUMMARY AND ANALYSIS OF THE FARM BUSINESS

### Business Characteristics

Planning the optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the grazing dairy farmers in New York. The following table shows important farm business characteristics and the number of farms with each characteristic.

**BUSINESS CHARACTERISTICS**
27 Intensive Grazing Dairy Farms, 2010

| Type of Farm | Number |
|---|---|
| Dairy | 27 |
| Part-time dairy | 0 |
| Dairy cash-crop | 0 |

| Type of Ownership | Number |
|---|---|
| Owner | 27 |
| Renter | 0 |

| Type of Business | Number |
|---|---|
| Sole Proprietorship | 17 |
| Partnership | 5 |
| Limited Liability Corporation | 5 |
| Subchapter S Corporation | 0 |
| Subchapter C Corporation | 0 |

| Type of Barn | Number |
|---|---|
| Stanchion or Tie-Stall | 12 |
| Freestall | 10 |
| Combination | 5 |

| Milking Frequency | Number |
|---|---|
| 2 times per day | 27 |
| 3 times per day | 0 |
| Other | 0 |

| Milking System | Number |
|---|---|
| Bucket & carry | 0 |
| Dumping station | 0 |
| Pipeline | 12 |
| Herringbone-conventional exit | 6 |
| Herringbone-rapid exit | 1 |
| Parallel | 2 |
| Parabone | 3 |
| Rotary | 0 |
| Other | 3 |

| Production Records | Number |
|---|---|
| Testing Service | 19 |
| On-Farm System | 4 |
| Other | 0 |
| None | 4 |

| Business Record System | Number |
|---|---|
| Account Book | 7 |
| Accounting Service | 2 |
| On-farm computer software | 18 |
| Other | 0 |

| Breed | Percent |
|---|---|
| Holstein | 71 |
| Jersey | 8 |
| Other | 21 |

The averages used in this report were compiled using data from all the participating grazing dairy farms in New York unless noted otherwise. There are full-time dairy farms, farm renters, partnerships, and corporations included in the average. Average data for these specific types of farms are presented in the State Business Summary.

### Income Statement

In order for an income statement to accurately measure farm income, it must include cash transactions and accrual adjustments (changes in accounts payable, accounts receivable, inventories, and prepaid expenses).

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 2010.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent purchased inputs not actually used during the year. Decreases in purchased inventories are added to expenses because they represent inputs purchased in a prior year and used this year.

**CASH AND ACCRUAL FARM EXPENSES**

27 Intensive Grazing Dairy Farms, 2010

| Expense Item | Cash Paid | - | Change in Inventory or Prepaid Expense | + | Change in Accounts Payable | = | Accrual Expenses |
|---|---|---|---|---|---|---|---|
| Hired Labor | $ 33,156 | | $ 167 | << | $ 105 | | $ 33,094 |
| Feed | | | | | | | |
| Dairy grain & concentrate | 101,973 | | 3,248 | | 1,124 | | 99,848 |
| Dairy roughage | 14,022 | | -3,041 | | -654 | | 16,409 |
| Nondairy | 59 | | -4 | | 0 | | 62 |
| Professional nutritional services | 61 | | 0 | << | 0 | | 61 |
| Machinery | | | | | | | |
| Machinery hire, rent & lease | 13,037 | | 722 | << | -607 | | 11,708 |
| Machinery repairs & farm vehicle exp. | 22,377 | | 43 | | 693 | | 23,027 |
| Fuel, oil & grease | 12,977 | | -236 | | 5 | | 13,218 |
| Livestock | | | | | | | |
| Replacement livestock | 707 | | 0 | << | 0 | | 707 |
| Breeding | 3,660 | | -17 | | -41 | | 3,636 |
| Veterinary & medicine | 8,190 | | 178 | | -102 | | 7,910 |
| Milk marketing | 21,504 | | 0 | << | -36 | | 21,467 |
| Bedding | 3,211 | | -26 | | -8 | | 3,229 |
| Milking supplies | 6,568 | | -49 | | 16 | | 6,633 |
| Cattle lease & rent | 0 | | 0 | << | 0 | | 0 |
| Custom boarding | 9,159 | | 0 | << | 296 | | 9,455 |
| bST expense | 181 | | -4 | | 0 | | 185 |
| Livestock professional fees | 1,220 | | 51 | << | 0 | | 1,169 |
| Other livestock expense | 3,858 | | -29 | | -103 | | 3,785 |
| Crops | | | | | | | |
| Fertilizer & lime | 20,974 | | 4,811 | | -171 | | 15,991 |
| Seeds & plants | 5,288 | | 17 | | -613 | | 4,658 |
| Spray, other crop expense | 1,771 | | 96 | | 19 | | 1,694 |
| Crop professional fees | 1,122 | | 0 | << | -59 | | 1,063 |
| Real Estate | | | | | | | |
| Land, building & fence repair | 6,227 | | 478 | | -149 | | 5,600 |
| Taxes | 10,887 | | -67 | << | -265 | | 10,689 |
| Rent & lease | 6,972 | | 0 | << | 0 | | 6,972 |
| Other | | | | | | | |
| Insurance | 6,483 | | 0 | << | 22 | | 6,505 |
| Utilities (farm share) | 10,138 | | 0 | << | -36 | | 10,102 |
| Interest paid | 15,040 | | 0 | << | -221 | | 14,819 |
| Other professional fees | 1,994 | | 0 | << | 74 | | 2,068 |
| Miscellaneous | 4,698 | | 59 | | -4 | | 4,635 |
| Total Operating | $ 347,513 | | $ 6,397 | | $ -715 | | $ 340,401 |
| Expansion livestock | 1,640 | | 0 | << | 0 | | 1,640 |
| Extraordinary expense | 0 | | 0 | << | 0 | | 0 |
| Machinery depreciation | | | | | | | 21,959 |
| Building depreciation | | | | | | | 17,688 |
| TOTAL ACCRUAL EXPENSES | | | | | | | $ 381,688 |

Change in prepaid expenses (noted above by <<) is a net change in non-inventory expenses that have been paid in advance of their use. For example, prepaid lease expense on the beginning of year balance sheet represents last year's payment for use of the asset during this year. End of year prepaid expense represents payments made this year for next year's use of the asset. Adding payments made last year for this year's use of the asset, and subtracting payments made this year for next year's use of the asset is accomplished by subtracting the difference.

Change in accounts payable: An increase in accounts payable from beginning to end of year is added when calculating accrual expenses because these expenses were incurred (resources used) in 2010 but not paid for. A decrease is subtracted because it represents payment for resources used before 2010.

Accrual expenses are an estimate of the costs of inputs actually used in this year's production. They are the cash paid, less changes in inventory and prepaid expenses, plus accounts payable.

**CASH AND ACCRUAL FARM RECEIPTS**

27 Intensive Grazing Dairy Farms, 2010

| Receipt Item | Cash Receipts | + | Change in Inventory | + | Change in Accounts Receivable | = | Accrual Receipts |
|---|---|---|---|---|---|---|---|
| Milk sales | $ 371,122 | | | | $ 6,472 | | $ 377,593 |
| Dairy cattle | 24,257 | | $ 15,316 | | 154 | | 39,728 |
| Dairy calves | 3,511 | | 4,026 | | 0 | | 7,537 |
| Other livestock | 15,893 | | -1,871 | | 2,444 | | 16,467 |
| Crops | 1,976 | | -264 | | 0 | | 1,712 |
| Government receipts | 5,882 | | 0 | | 518 | | 6,400 |
| Custom machine work | 981 | | | | 12 | | 994 |
| Gas tax refund | 489 | | | | 0 | | 489 |
| Other | 8,045 | | | | -37 | | 8,008 |
| Less nonfarm noncash capital[8] | | (-) | 0 | | | (-) | 0 |
| Total Receipts | $ 432,157 | | $ 17,208 | | $ 9,563 | | $ 458,928 |

[7]Change in advanced government receipts.

[8]Gifts or inheritances of cattle or crops included in inventory.

Cash receipts include the gross value of milk checks received during the year plus all other payments received from the sale of farm products, services, and government programs. Nonfarm income is not included in calculating farm profitability.

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An increase in advanced government receipts is subtracted from cash income because it represents income received in 2010 for the 2011 crop year in excess of funds earned for 2010. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2010 but received in 2009.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January for milk produced in December 2010 compared to January 2010 payments for milk produced in 2009 are included as a change in accounts receivable.

Accrual receipts represent the value of all farm commodities produced and services actually generated by the farm business during the year.

**Profitability Analysis**

Farm operators[9] contribute labor, management, and equity capital to their businesses and the combination of these resources, and the other resources used in the business, determines profitability. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

These measures should be considered estimates as they include inventory values that are only estimates and they include an unknown degree of error stemming from cash flow imbalances.

[9]Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who are the owner of a sole proprietorship or are formally a member of the partnership or corporation.

Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, and financing the farm business. This is not a measure of cash available from the year's business operation. Cash flow is evaluated later in this report.

Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

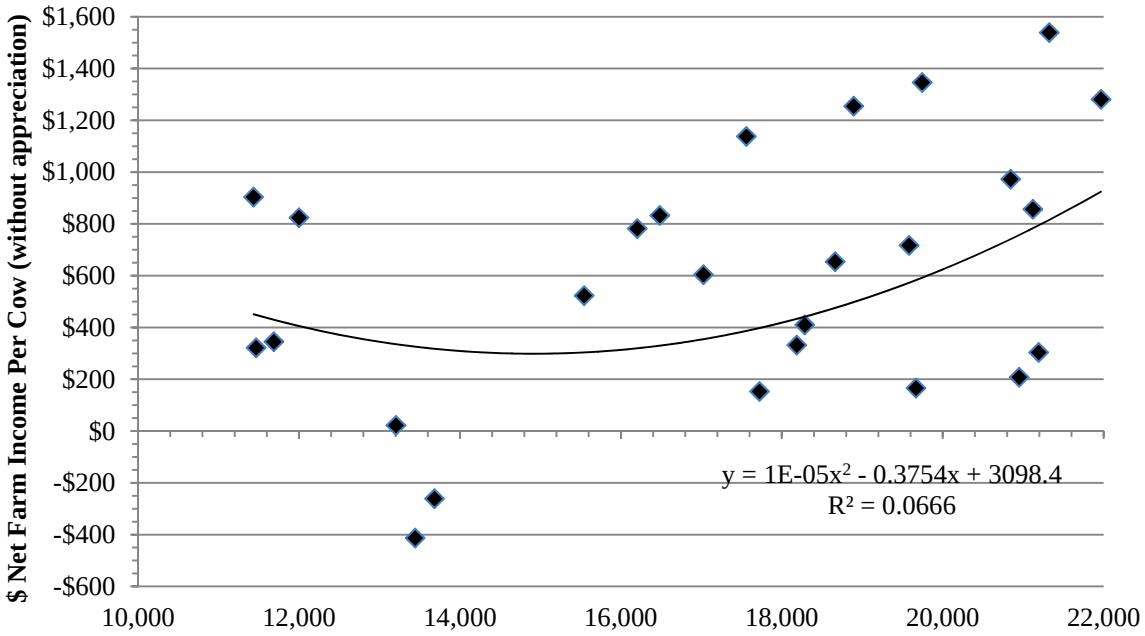
**NET FARM INCOME**
Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[10] | Average Non-Grazing Farms[10] |
|---|---|---|
| Total accrual receipts | $ 458,928 | $ 608,231 |
| Appreciation: Livestock | -1,107 | -956 |
| Machinery | 7,057 | 6,710 |
| Real Estate | 20,430 | 20,393 |
| Other Stock & Certificates | -28 | 1,335 |
| Total Including Appreciation | $ 485,280 | $ 635,713 |
| Total accrual expenses | - 381,688 | - 536,567 |
| Net Farm Income (with appreciation) | $ 103,591 | $ 99,146 |
| Net Farm Income Per Cow (with appreciation) | $ 770 | $ 720 |
| Net Farm Income (without appreciation) | $ 77,240 | $ 71,665 |
| Net Farm Income Per Cow (without appreciation) | $ 574 | $ 520 |

[10]See page 1 for a description of these groups of farms.

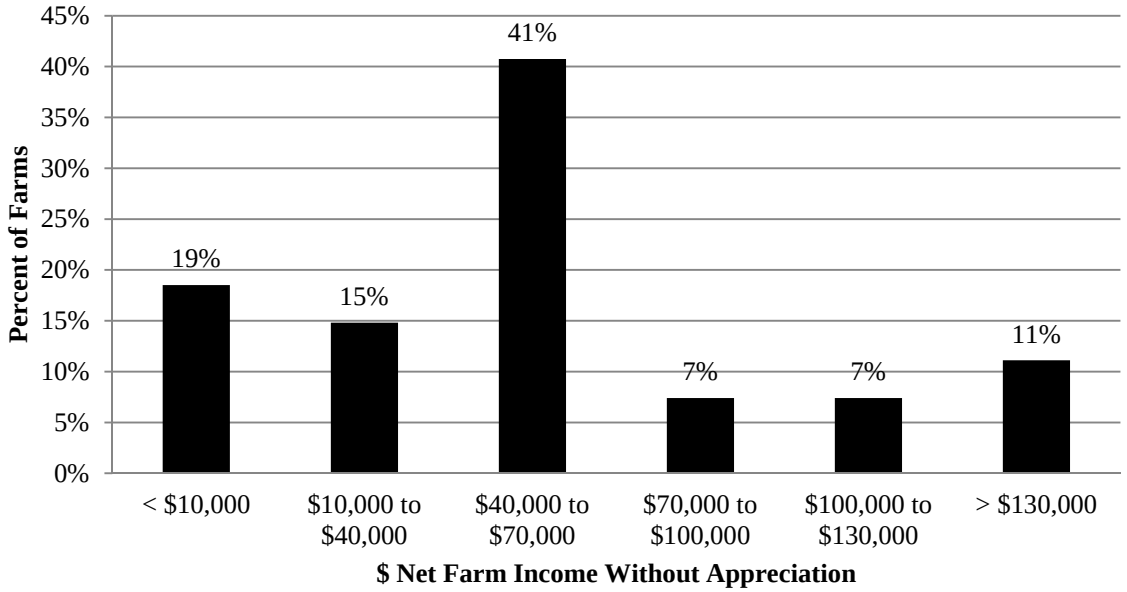
The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher new farm incomes can be achieved across a range of production levels as a result of different management systems, such as grazing, being utilized by the participating dairies.

**NET FARM INCOME PER COW AND MILK PER COW**
**27 Intensive Grazing Dairy Farms, 2010**



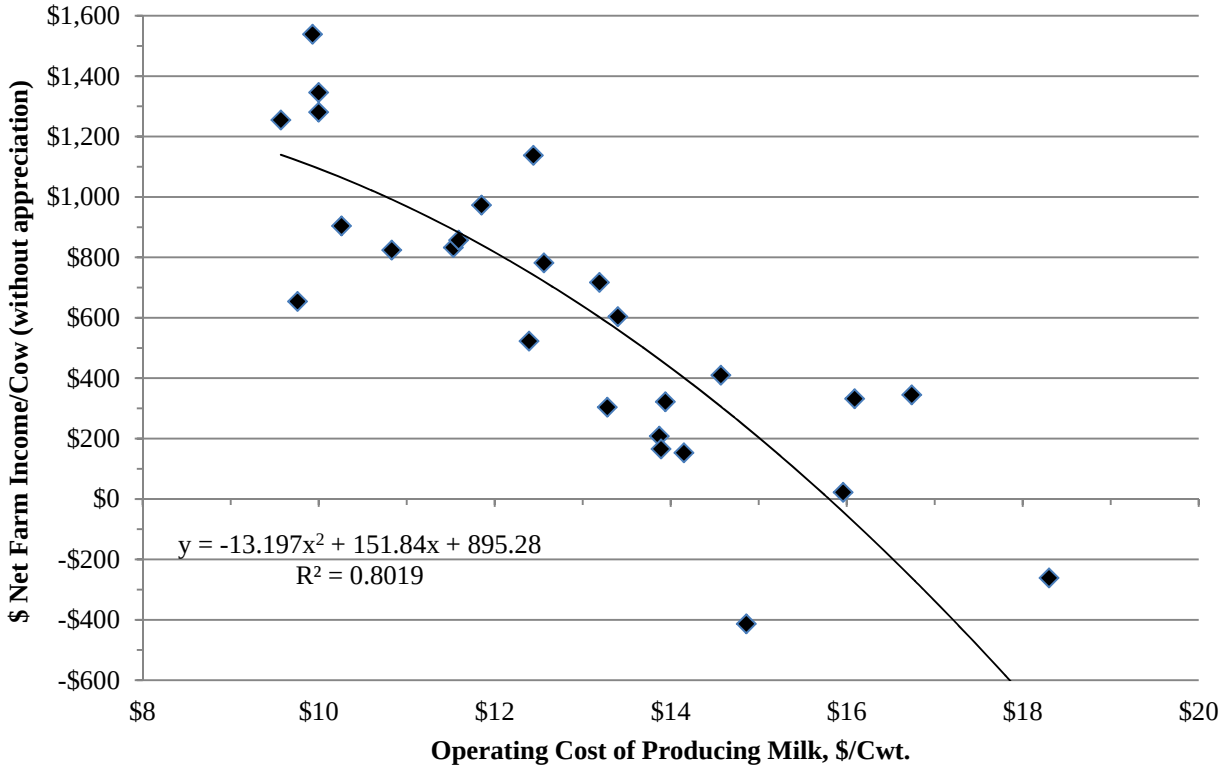
Net farm income without appreciation averaged $71,655 on these 27 farms in 2010. The range in net farm income without appreciation was from less than $-83,000 to more than $604,000. Net farm income was less than $40,000 on 34 percent of the farms, between $40,000 and $100,000 on 48 percent of the farms, while 18 percent had net farm incomes of $100,000 or more.

**DISTRIBUTION OF NET FARM INCOME WITHOUT APPRECIATION**
**27 Intensive Grazing Dairy Farms, 2010**




The importance of cost control and its impact on farm profitability are illustrated in the chart below. As the operating cost of producing milk per hundredweight increased, net farm income per cow fell.

**NET FARM INCOME/COW & OPERATING COST OF PRODUCTION MILK/CWT.**
**27 Intensive Grazing Dairy Farms, 2010**



Labor and management income is the return which farm operators receive for their labor and management used in the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting a charge for family labor unpaid and the opportunity cost of using equity capital, at a real interest rate of five percent, from net farm income excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments.

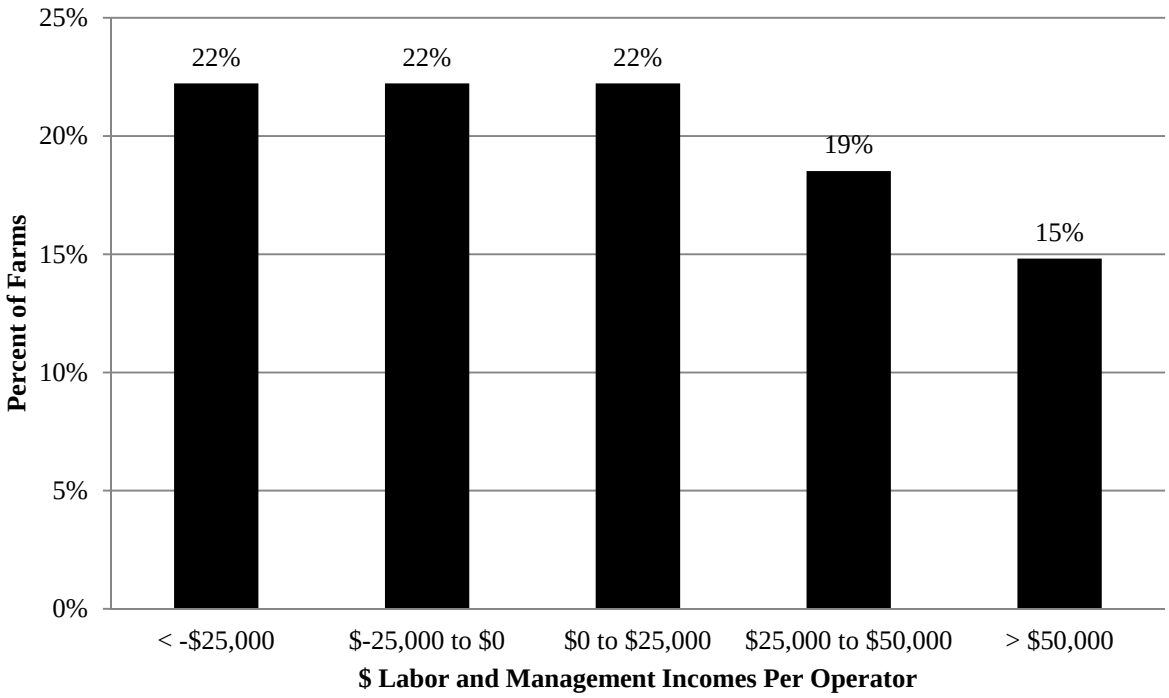
**LABOR AND MANAGEMENT INCOME**
Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[11] | Average Non-Grazing Farms[11] |
|---|---|---|
| Net farm income without appreciation | $ 77,240 | $ 71,665 |
| Family labor unpaid @ $2,500 per month | - 8,602 | - 5,865 |
| Interest on average equity capital @ 5% real rate | - 39,271 | - 53,250 |
| Labor & Management Income per Farm | $ 29,367 | $ 12,550 |
| Labor & Management Income per Operator/Manager | $ 22,765 | $ 7,382 |
| Labor & Management Income per Operator per Cow | $ 170 | $ 53 |

[11]See page 1 for a description of these groups of farms.

Labor and management income per operator averaged $22,765 on these 27 farms in 2010. The range in labor and management income per operator was from less than $-81,000 to more than $415,000. Returns to labor and management were less than $0 on 44 percent of the farms. Labor and management incomes per operator were between $0 and $25,000 on 22 percent of the farms while 34 percent showed labor and management incomes of $25,000 or more per operator.

**DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR**
**27 Intensive Grazing Dairy Farms, 2010**




The distribution of labor and management incomes per operator on grazing farms is somewhat similar to the distribution for all farms across the State that participate in the DFBS project. A considerable percentage of farms have labor and management incomes per operator less than zero. One comparison to make to the state distribution is the percentage of farms that were above zero labor and management income per operator. For the intensive grazing farms, 56 percent of the farms had returns that were over zero, while for 204 farms across the State, 68 percent had returns greater than zero in 2010.

Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on total capital. Net farm income from operations ratio is net farm income (without appreciation) divided by total accrual receipts.

**RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | | 27 Grazing Dairy Farms[12] | | Average Non-Grazing Farms[12] |
|---|---|---|---|---|
| Net farm income with appreciation | $ | 103,591 | $ | 99,146 |
| Family labor unpaid @ $2,500 per month | - | 8,602 | - | 5,865 |
| Value of operators' labor & management | - | 46,827 | - | 61,713 |
| Return on equity capital with appreciation | $ | 48,162 | $ | 31,568 |
| Interest paid | + | 14,819 | + | 19,933 |
| Return on total capital with appreciation | $ | 62,981 | $ | 51,501 |
| Return on equity capital without appreciation | $ | 21,811 | $ | 4,087 |
| Return on total capital without appreciation | $ | 36,630 | $ | 24,020 |
| Rate of return on average equity capital: | | | | |
| with appreciation | | 6.0% | | 3.0% |
| without appreciation | | 2.7% | | 0.4% |
| Rate of return on average total capital: | | | | |
| with appreciation | | 5.6% | | 3.4% |
| without appreciation | | 3.3% | | 1.6% |
| Net farm income from operations ratio | | 0.17 | | 0.12 |

[12]See page 1 for a description of these groups of farms.

**Farm and Family Financial Status**

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies and values all the assets and liabilities of the business. The second step is to evaluate the relationship between assets, liabilities, and net worth and changes that occurred during the year.

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 2010, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2010 that are for participation in the 2011 program are the end year balance and payments received in 2009 for participation in the 2010 program are the beginning year balance.

Current Portion or principal due in the next year for intermediate and long term debt is included as a current liability.

**2010 FARM BUSINESS & NONFARM BALANCE SHEET**

27 Intensive Grazing Dairy Farms, 2010

| Farm Assets | Jan. 1 | Dec. 31 | Farm Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|---|---|---|---|---|---|
| Current | | | Current | | |
| Farm cash, checking & savings | $ 9,247 | $ 12,175 | Accounts payable | $ 21,614 | $ 20,899 |
| Accounts receivable | 17,877 | 27,441 | Operating debt | 22,769 | 18,819 |
| Prepaid expenses | 112 | 984 | Short Term | 3,564 | 2,334 |
| Feed & supplies | 66,372 | 71,632 | Advanced govt. receipts | 0 | 0 |
| | | | Current Portion: | | |
| | | | Intermediate | 19,609 | 22,439 |
| | | | Long Term | 10,939 | 12,119 |
| Total Current | $ 93,608 | $ 112,233 | Total Current | $ 78,495 | $ 76,610 |
| Intermediate | | | Intermediate | | |
| Dairy cows: | | | Structured debt | | |
| owned | $ 156,963 | $ 170,761 | 1-10 years | $ 83,147 | $ 72,040 |
| leased | 1 | 0 | Financial lease | | |
| Heifers | 96,565 | 93,894 | (cattle/machinery) | 221 | 1,179 |
| Bulls & other livestock | 15,335 | 20,572 | Farm Credit stock | 334 | 302 |
| Mach. & equip. owned | 189,076 | 195,754 | Total Intermediate | $ 83,702 | $ 73,521 |
| Mach. & equip. leased | 220 | 1,178 | | | |
| Farm Credit stock | 334 | 302 | | | |
| Other stock/certificate | 8,377 | 8,796 | | | |
| Total Intermediate | $ 466,871 | $ 491,259 | | | |
| | | | Long Term | | |
| Long Term | | | Structured debt | | |
| Land & buildings: | | | >10 years | $ 160,494 | $ 154,008 |
| owned | $ 530,404 | $ 542,330 | Financial lease | | |
| leased | 0 | 0 | (structures) | 0 | 0 |
| Total Long Term | $ 530,404 | $ 542,330 | Total Long Term | $ 160,494 | $ 154,008 |
| | | | Total Farm Liab. | $ 322,691 | $ 304,138 |
| Total Farm Assets | $1,090,883 | $1,145,821 | FARM NET WORTH | $ 768,193 | $ 841,683 |

Nonfarm Assets, Liabilities & Net Worth (Average of 14 farms reporting)

| Assets | Jan. 1 | Dec. 31 | Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|---|---|---|---|---|---|
| Personal cash, checking & savings | $ 17,434 | $ 20,911 | Nonfarm Liabilities | $ 13,782 | $ 13,256 |
| Cash value life insurance | 14,134 | 15,377 | | | |
| Nonfarm real estate | 43,571 | 45,357 | | | |
| Auto (personal share) | 7,464 | 7,500 | | | |
| Stocks & bonds | 31,459 | 32,491 | | | |
| Household furnishings | 7,214 | 7,750 | | | |
| All other nonfarm assets | 29,643 | 26,786 | | | |
| Total Nonfarm Assets | $150,919 | $156,172 | NONFARM NET WORTH | $137,138 | $142,916 |

| Farm & Nonfarm Assets, Liabilities, and Net Worth[13] | Jan. 1 | Dec. 31 |
|---|---|---|
| Total Assets | $1,241,802 | $1,301,993 |
| Total Liabilities | 336,473 | 317,394 |
| TOTAL FARM & NONFARM NET WORTH | $ 905,329 | $ 984,599 |

[13]Assumes that average nonfarm assets and liabilities for the nonreporting farms were the same as for those reporting.

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. The leverage ratio is the dollars of debt per dollar of equity, computed by dividing total farm liabilities by farm net worth. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability. A current ratio that has been falling or is less than 1.5 warrants additional evaluation. An adequate amount of working capital will be related to the size of the farm business.

**BALANCE SHEET ANALYSIS**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | | 27 Grazing Dairy Farms[14] | Average Non-Grazing Farms[14] |
|---|---|---|---|
| Financial Ratios - Farm: | | | |
| Percent equity | | 73% | 70% |
| Debt/asset ratio: | total | 0.27 | 0.30 |
| | long-term | 0.28 | 0.27 |
| | intermediate/current | 0.25 | 0.31 |
| Leverage Ratio | | 0.36 | 0.42 |
| Current Ratio | | 1.46 | 2.11 |
| Working Capital: | $35,623; As % of Expenses | 9% | $106,126 20% |
| Farm Debt Analysis: | | | |
| Accounts payable as % of total debt | | 7% | 7% |
| Long-term liabilities as a % of total debt | | 51% | 42% |
| Current & inter. liabilities as a % of total debt | | 49% | 58% |
| Cost of term debt (weighted average) | | 3.6% | 8.0% |

| Farm Debt Levels: | 27 Grazing Dairy Farms[14] Per Cow | 27 Grazing Dairy Farms[14] Per Tillable Acre Owned | Average Non-Grazing Farms[14] Per Cow | Average Non-Grazing Farms[14] Per Tillable Acre Owned |
|---|---|---|---|---|
| Total farm debt | $ 2,250 | $ 1,705 | $ 3,287 | $ 2,378 |
| Long-term debt | 1,140 | 864 | 1,393 | 1,008 |
| Intermediate & long term | 1,684 | 1,276 | 2,606 | 1,885 |
| Intermediate & current debt | 1,111 | 842 | 1,894 | 1,370 |

[14] See page 1 for a description of these groups of farms.

Farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Changes in the livestock inventory are included in the dairy analysis. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

**FARM INVENTORY BALANCE**

27 Intensive Grazing Dairy Farms, 2010

| Item | Real Estate | Machinery & Equipment |
|---|---|---|
| Value beginning of year | $ 530,404 | $ 189,076 |
| Purchases | $ 16,024[15] | $ 21,238 |
| Gift & inheritance | + 0 | + 370 |
| Lost capital | - 6,839 | |
| Sales | - 0 | - 28 |
| Depreciation | - 17,688 | - 21,959 |
| Net investment | = -8504 | = -378 |
| Appreciation | + 20,430 | + 7,057 |
| Value end of year | $ 542,330 | $ 195,754 |

[15] $222 land and $15,802 building and/or depreciable improvements.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are consistent (in accountants terms, they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) , (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity), and (4) the error in the business cash flow accounting.

Retained earnings is an excellent indicator of farm generated financial progress.

**STATEMENT OF OWNER EQUITY (RECONCILIATION)**
Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[16] | | Average Non-Grazing Farms[16] | |
|---|---|---|---|---|
| Beginning of year farm net worth | | $ 768,193 | | $1,031,118 |
| Net farm income w/o appreciation | $ 77,240 | | $ 71,665 | |
| +Nonfarm cash income | + 10,533 | | + 9,883 | |
| -Personal withdrawals & family expenditures excluding nonfarm borrowings | - 40,380 | | - 51,214 | |
| RETAINED EARNINGS | | +$ 47,393 | | +$ 30,334 |
| Nonfarm noncash transfers to farm | $ 370 | | $ 12,708 | |
| +Cash used in business from nonfarm capital | + 6,970 | | + 5,617 | |
| -Note or mortgage from farm real estate sold (nonfarm) | - 0 | | - 0 | |
| CONTRIBUTED/ WITHDRAWN CAPITAL | | +$ 7,340 | | +$ 18,326 |
| Appreciation | $ 26,351 | | $ 27,482 | |
| -Lost capital | - 6,839 | | - 7,796 | |
| CHANGE IN VALUATION EQUITY | | +$ 19,512 | | +$ 19,686 |
| IMBALANCE/ERROR | | - 755 | | - 568 |
| End of year net worth[17] | | =$841,683 | | =$1,098,896 |
| Change in Net Worth | | | | |
| Without appreciation | $ 47,139 | | $ 40,296 | |
| With appreciation | $ 73,490 | | $ 67,778 | |

[16]See page 1 for a description of these groups of farms.
[17]May not add due to rounding.

**Cash Flow Statement**

Completing an annual cash flow statement is an important step in understanding the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows, including beginning and end balances, are included. Therefore, the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash inflows/outflows. You should be aware that all profitability measures may be affected by this error.

**ANNUAL CASH FLOW STATEMENT**
27 Intensive Grazing Dairy Farms, 2010

| Item | | | Average | |
|---|---|---|---|---|
| Cash Flow from Operating Activities | | | | |
| | Cash farm receipts | $ 432,157 | | |
| - | Cash farm expenses | 347,513 | | |
| - | Extraordinary expense | 0 | | |
| = | Net cash farm income | | $ 84,644 | |
| | Personal withdrawals & family expenses | | | |
| | including nonfarm debt payments | $ 40,529 | | |
| - | Nonfarm income | 10,533 | | |
| - | Net cash withdrawals from the farm | | $ 29,996 | |
| = | Net Provided by Operating Activities | | | $ 54,648 |
| Cash Flow From Investing Activities | | | | |
| | Sale of assets: machinery | $ 28 | | |
| | + real estate | 0 | | |
| | + other stock & cert. | 119 | | |
| = | Total asset sales | | $ 147 | |
| | Capital purchases: expansion livestock | $ 1,640 | | |
| | + machinery | 21,238 | | |
| | + real estate | 16,024 | | |
| | + other stock& cert. | 567 | | |
| - | Total invested in farm assets | | $ 39,469 | |
| = | Net Provided by Investment Activities | | | $ -39,322 |
| Cash Flow From Financing Activities | | | | |
| | Money borrowed (intermediate & long term) | $ 20,941 | | |
| + | Money borrowed (short term) | 0 | | |
| + | Increase in operating debt | 0 | | |
| + | Cash from nonfarm capital used in business | 6,970 | | |
| + | Money borrowed - nonfarm | 149 | | |
| = | Cash inflow from financing | | $ 28,060 | |
| | Principal payments (intermediate & long term) | $ 34,524 | | |
| + | Principal payments (short term) | 1,231 | | |
| + | Decrease in operating debt | 3,949 | | |
| - | Cash outflow for financing | | $ 39,704 | |
| = | Net Provided by Financing Activities | | | $ -11,644 |
| Cash Flow From Reserves | | | | |
| | Beginning farm cash, checking & savings | | $ 9,247 | |
| - | Ending farm cash, checking & savings | | 12,175 | |
| = | Net Provided from Reserves | | | $ -2,928 |
| Imbalance (error) | | | | $ 755 |

**Repayment Analysis**

A valuable use of cash flow analysis is to compare the debt payments planned for the last year with the amount actually paid. The measures listed below provide a number of different perspectives on the repayment performance of the business. However, the critical question to many farmers and lenders is whether planned payments can be made in 2011. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2011 debt payments shown below.

**FARM DEBT PAYMENTS PLANNED**

Same Intensive Grazing and Non-Grazing Dairy Farms, 2009 & 2010

| | Same 23 Grazing Dairy Farms | | | Same 64 Non-Grazing Dairy Farms | | |
|---|---|---|---|---|---|---|
| | 2010 Payments | | Planned | 2010 Payments | | Planned |
| Debt Payments | Planned | Made | 2011 | Planned | Made | 2011 |
| Long term | $ 9,877 | $ 9,885 | $ 9,307 | $ 20,436 | $ 24,167 | $ 22,941 |
| Intermediate term | 20,179 | 21,758 | 25,177 | 43,721 | 52,606 | 45,961 |
| Short term | 2,426 | 1,587 | 1,781 | 722 | 1,071 | 1,124 |
| Operating (net reduction) | 2,752 | 3,471 | 912 | 2,594 | 10,490 | 2,290 |
| Accounts payable (net reduction) | 0 | 4,364 | 0 | 3,508 | 11,988 | 1,820 |
| Total | $ 35,234 | $ 41,065 | $ 37,177 | $ 70,980 | $ 100,322 | $ 74,136 |
| Per cow | $ 331 | $ 386 | | $ 508 | $ 717 | |
| Per cwt. 2010 milk | $ 1.99 | $ 2.31 | | $ 2.33 | $ 3.29 | |
| Percent of total 2010 farm receipts | 10% | 11% | | 12% | 16% | |
| Percent of 2010 milk receipts | 11% | 13% | | 13% | 19% | |

The coverage ratios measure the ability of the farm business to meet its planned debt payment schedule. The ratios show the percentage of payments planned for 2010 (as of December 31, 2009) that could have been made with the amount available for debt service in 2010. Farmers who did not participate in DFBS in 2009 have their 2010 coverage ratios based on planned debt payments for 2011.

**COVERAGE RATIOS**

Same Intensive Grazing and Non-Grazing Dairy Farms, 2009 & 2010

| Item | Average | Item | Average |
|---|---|---|---|
| Same 23 Grazing Dairy Farms, 2009 & 2010 | | | |
| (A)=Amount Available for Debt Service | $ 52,253 | (A')=Repayment Capacity | $ 66,517 |
| (B)=Debt Payments Planned for 2010 | $ 35,234 | (B)=Debt Payments Planned for 2010 | $ 35,234 |
| (A/B)=Cash Flow Coverage Ratio for 2010 | 1.48 | (A'/B)=Debt Coverage Ratio for 2010 | 1.89 |
| Same 64 Farms Non-Grazing Dairy Farms, 2009 & 2010 | | | |
| (A)=Amount Available for Debt Service | $ 54,955 | (A')=Repayment Capacity | $ 90,028 |
| (B)=Debt Payments Planned for 2010 | $ 70,980 | (B)=Debt Payments Planned for 2010 | $ 70,980 |
| (A/B)=Cash Flow Coverage Ratio for 2010 | 0.77 | (A'/B)=Debt Coverage Ratio for 2010 | 1.27 |

**ANNUAL CASH FLOW WORKSHEET**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms | | Average Non-Grazing Farms | |
|---|---|---|---|---|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average no. of cows | 134 | | 138 | |
| Total cwt. of milk sold | | 20,483 | | 29,894 |
| Accrual Operating Receipts | | | | |
| Milk | $2,808 | $18.43 | $3,828 | $17.65 |
| Dairy cattle | 295 | 1.94 | 219 | 1.01 |
| Dairy calves | 56 | 0.37 | 43 | 0.20 |
| Other livestock | 122 | 0.80 | 0 | 0.00 |
| Crops | 13 | 0.08 | 194 | 0.89 |
| Misc. Receipts | 118 | 0.78 | 131 | 0.60 |
| Total | $3,413 | $22.41 | $4,415 | $20.35 |
| Accrual Operating Expenses | | | | |
| Hired labor | $ 246 | $ 1.62 | $ 407 | $ 1.88 |
| Dairy grain & concentrate | 742 | 4.87 | 1,138 | 5.25 |
| Dairy roughage | 122 | 0.80 | 96 | 0.44 |
| Nondairy feed | 0 | 0.00 | 3 | 0.01 |
| Professional nutritional services | 0 | 0.00 | 0 | 0.00 |
| Mach. hire, rent & lease | 87 | 0.57 | 111 | 0.51 |
| Mach. repair & vehicle expense | 171 | 1.12 | 215 | 0.99 |
| Fuel, oil & grease | 98 | 0.65 | 177 | 0.82 |
| Replacement livestock | 5 | 0.03 | 23 | 0.11 |
| Breeding | 27 | 0.18 | 53 | 0.24 |
| Vet & medicine | 59 | 0.39 | 123 | 0.57 |
| Milk marketing | 160 | 1.05 | 197 | 0.91 |
| Bedding | 24 | 0.16 | 68 | 0.31 |
| Milking supplies | 49 | 0.32 | 88 | 0.41 |
| Cattle lease | 0 | 0.00 | 6 | 0.03 |
| Custom boarding | 70 | 0.46 | 28 | 0.13 |
| bST expense | 1 | 0.01 | 28 | 0.13 |
| Livestock professional fees | 9 | 0.06 | 15 | 0.07 |
| Other livestock expense | 28 | 0.18 | 30 | 0.14 |
| Fertilizer & lime | 119 | 0.78 | 105 | 0.48 |
| Seeds & plants | 35 | 0.23 | 74 | 0.34 |
| Spray & other crop expense | 13 | 0.08 | 42 | 0.19 |
| Crop professional fees | 8 | 0.05 | 6 | 0.03 |
| Land, bldg., fence repair | 42 | 0.27 | 55 | 0.25 |
| Taxes | 79 | 0.52 | 87 | 0.40 |
| Real estate rent & lease | 52 | 0.34 | 42 | 0.19 |
| Insurance | 48 | 0.32 | 55 | 0.26 |
| Utilities | 75 | 0.49 | 120 | 0.55 |
| Miscellaneous | 50 | 0.33 | 43 | 0.20 |
| Total Less Interest Paid | $2,421 | $15.90 | $3,434 | $15.83 |
| Net Accrual Operating Income | Total | | Total | |
| (without interest paid) | $ 133,347 | | $ 135,049 | |
| - Change in livestock & crop invent.[18] | 17,208 | | 26,969 | |
| - Change in accounts receivable | 9,563 | | 4,656 | |
| - Change in feed & supply inventory[19] | 6,397 | | 439 | |
| + Change in accounts payable[20] | -494 | | -5,894 | |
| NET CASH FLOW | $ 99,684 | | $ 97,091 | |
| - Net family withdrawals | 29,847 | | 39,320 | |
| Available for Farm | $ 69,837 | | $ 57,771 | |
| - Farm debt payments | 57,973 | | 92,985 | |
| Available for Farm Investment | $11,864 | | $ -35,213 | |
| - Capital purchases | 39,469 | | 55,581 | |
| Additional Capital Needed | $ -27,605 | | $-90,794 | |

[18]Includes change in advance government receipts. [19]Includes change in prepaid expenses. [20]Excludes change in interest account payable.

**Cropping Analysis**

The cropping program is an important part of the dairy farm business and often represents opportunities for improved productivity and profitability. A complete evaluation of what the available land resources are, how they are being used, how well crops are producing, and what it costs to produce them is important to evaluating alternative cropping and feed purchasing alternatives.

**LAND RESOURCES AND CROP PRODUCTION**
Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[22] | | | Average Non-Grazing Farms[22] | | |
|---|---|---|---|---|---|---|
| Land | Owned | Rented | Total | Owned | Rented | Total |
| Tillable | 178 | 121 | 299 | 194 | 172 | 366 |
| Nontillable | 29 | 19 | 48 | 46 | 8 | 54 |
| Other nontill. | 115 | 12 | 127 | 96 | 1 | 97 |
| Total | 322 | 152 | 474 | 336 | 181 | 517 |
| Crop Yields | Farms | Acres[21] | Prod/Acre | Farms | Acres[21] | Prod/Acre |
| Hay crop | 26 | 194 | 2.2 tn DM | 67 | 232 | 2.8 tn DM |
| Corn silage | 16 | 49 | 19.7 tn | 65 | 92 | 18.7 tn |
| | | | 6.6 tn DM | | | 6.4 tn DM |
| Other forage | 3 | 20 | 1.3 tn DM | 7 | 31 | 1.8 tn DM |
| Total forage | 26 | 226 | 2.8 tn DM | 68 | 320 | 3.8 tn DM |
| Corn grain | 2 | 49 | 124 bu | 33 | 74 | 142 bu |
| Oats | 3 | 21 | 22 bu | 7 | 28 | 62 bu |
| Wheat | 1 | 16 | 69 bu | 2 | 63 | 82 bu |
| Other crops | 4 | 18 | | 21 | 65 | |
| Tillable pasture | 14 | 137 | | 12 | 46 | |
| Idle | 3 | 10 | | 7 | 13 | |
| Total Tillable Acres | 27 | 299 | | 72 | 366 | |

[21]This column represents the average acreage for the farms producing that crop. For the 27 intensive grazing dairy farms, average acreages including those farms not producing were hay crop 187, corn silage 29, corn grain 4, oats 2, wheat 1, tillable pasture 71, and idle 1.

Average crop acres and yields compiled for the grazing farms are for the farms reporting each crop. Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

**CROP/DAIRY RATIOS**
Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 26 Grazing Dairy Farms[22] | Average Non-Grazing Farms[22] |
|---|---|---|
| Total tillable acres per cow | 2.24 | 2.77 |
| Total forage acres per cow | 1.64 | 2.32 |
| Harvested forage dry matter, tons per cow | 4.54 | 8.80 |

[22]See page 1 for a description of these groups of farms. Excludes farms that do not harvest forages.

**Cropping Analysis** (continued)

Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs.

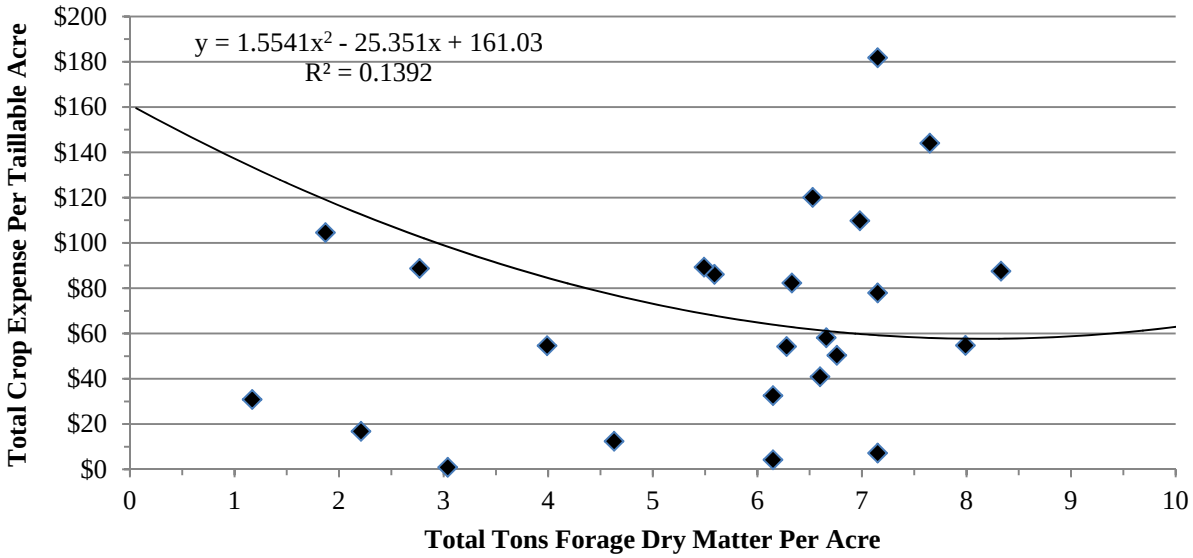
**CROP RELATED ACCRUAL EXPENSES**

Intensive Grazing and Non-Grazing Dairy Farms That Harvest Forages, 2010

| Item | 26 Grazing Dairy Farms[23] | Average Non-Grazing Farms[23] |
|---|---|---|
| | Total Per Tillable Acre | |
| Number of farms reporting | 26 | 68 |
| Average number of acres | 310 | 382 |
| Fertilizer & lime expense | $ 55.13 | $ 37.82 |
| Seeds & plants | 15.70 | 27.43 |
| Spray & other crop expenses | 8.32 | 16.42 |
| TOTAL | $ 79.15 | $ 81.67 |

[23]See page 1 for a description of these groups of farms. Excludes farms that do not harvest forages.

**CROP EXPENSE PER ACRE AND TOTAL FORAGE PRODUCTION PER ACRE**
**26 Intensive Grazing Dairy Farms, 2010**




Most machinery costs are associated with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Although machinery costs have not been allocated to individual crops, they are shown below per total tillable acre.

**ACCRUAL MACHINERY EXPENSES**

Intensive Grazing and Non-Grazing Dairy Farms That Harvest Forages, 2010

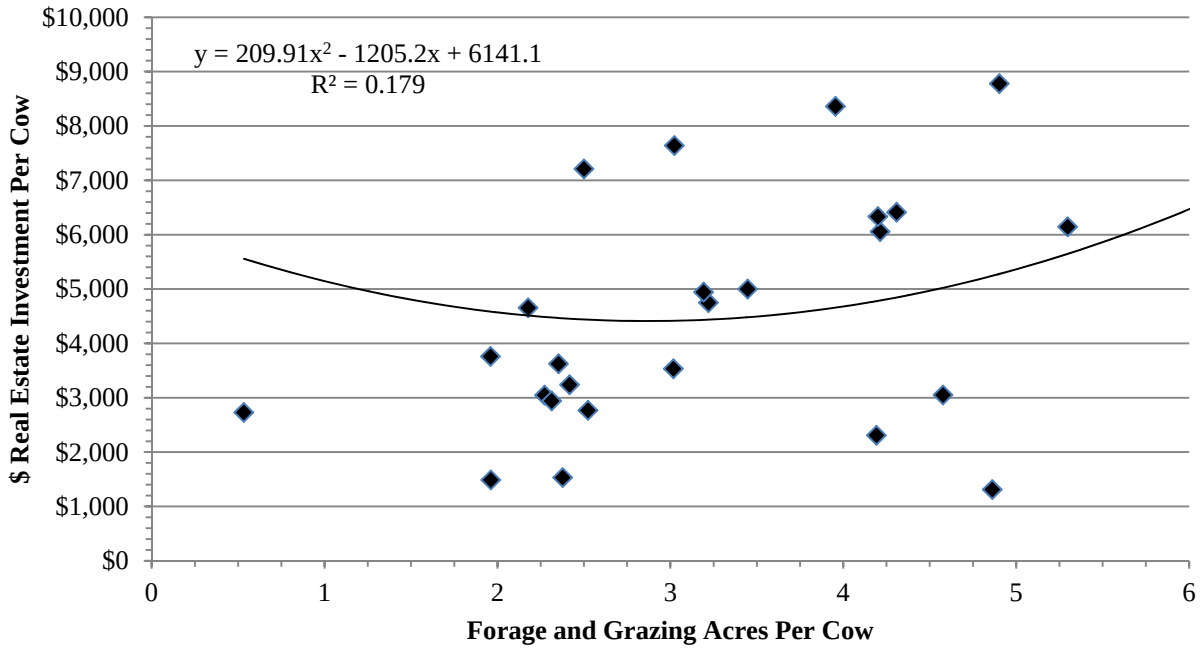
| Machinery Expense | 26 Grazing Dairy Farms[24] Total Expenses | 26 Grazing Dairy Farms[24] Per Tillable Acre | Average Non-Grazing Farms[24] Total Expenses | Average Non-Grazing Farms[24] Per Tillable Acre |
|---|---|---|---|---|
| Fuel, oil & grease | $ 13,454 | $ 43.43 | $ 24,797 | $ 64.93 |
| Mach. repair & vehicle exp. | 23,445 | 75.68 | 30,340 | 79.45 |
| Machine hire, rent & lease | 11,987 | 38.69 | 15,786 | 41.33 |
| Interest (5%) | 9,738 | 31.44 | 15,124 | 39.60 |
| Depreciation | 22,512 | 72.67 | 25,020 | 65.51 |
| Total | $ 81,135 | $261.91 | $111,066 | $290.82 |

[24]See page 1 for a description of these groups of farms. Excludes farms that do not harvest forages.

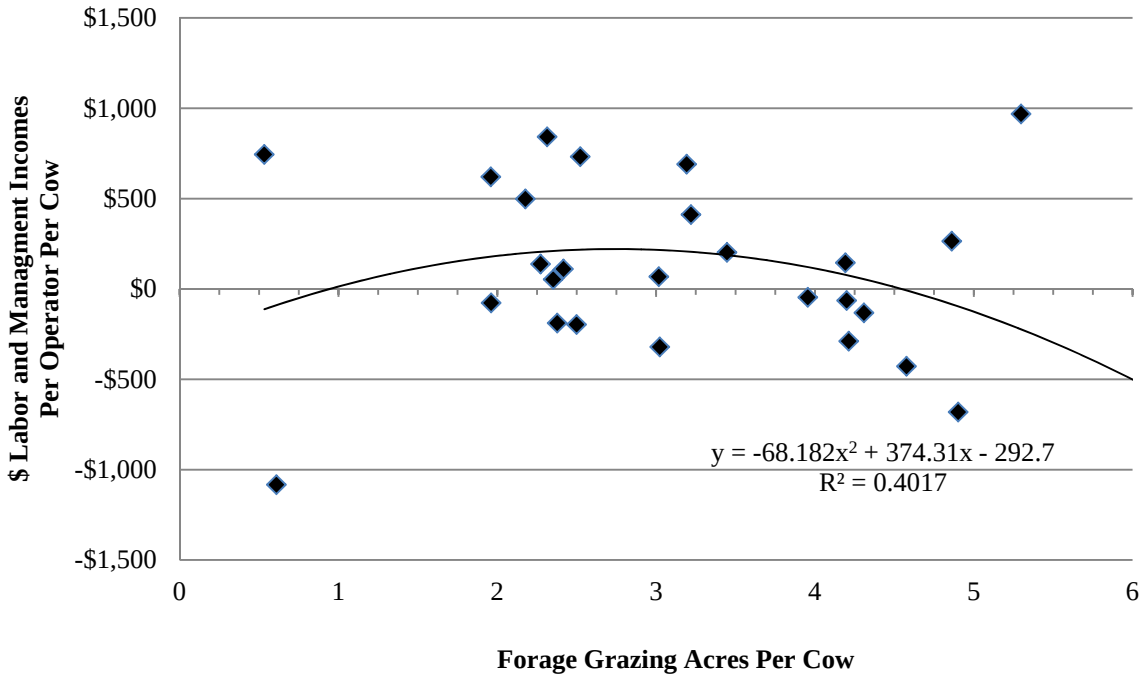
**Cropping Analysis** (continued)

The charts below show the relationship between the stocking rate (forage and grazing acres per cow) and labor and management income per operator per cow and real estate investment per cow. Stocking rate is total tillable acres plus nontillable pasture acres less corn grain acres, all divided by the average number of cows.

**REAL ESTATE INVESTMENT/COW & FORAGE AND GRAZING ACRES/COW**
**27 Intensive Grazing Farms, 2010**




**LABOR AND MANAGEMENT INCOMES/OPERATOR/COW & FORAGE AND GRAZING ACRES/COW**
**27 Intensive Grazing Dairy Farms, 2010**



**Dairy Analysis**

Analysis of the dairy enterprise can reveal strengths and weaknesses of the dairy farm business. Information on this page should be used in conjunction with DHI and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 20 through 23.

**DAIRY HERD INVENTORY**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| | Dairy Cows | | Bred Heifers | | Open Heifers | | Calves | |
|---|---|---|---|---|---|---|---|---|
| Item | No. | Value | No. | Value | No. | Value | No. | Value |
| 27 Grazing Dairy Farms[25] | | | | | | | | |
| Beg. year (owned) | 119 | $ 156,963 | 41 | $ 54,680 | 34 | $ 26,977 | 23 | $ 14,907 |
| + Change w/o apprec. | | 19,346 | | -2,928 | | -1,102 | | 4,026 |
| + Appreciation | | -5,548 | | -1,215 | | -585 | | -867 |
| End year (owned) | 134 | $ 170,761 | 40 | $ 50,537 | 33 | $ 25,290 | 27 | $ 18,067 |
| End including leased | 135 | | | | | | | |
| Average number | 135 | | 100 | (all age groups) | | | | |
| Average Non-Grazing Farms[25] | | | | | | | | |
| Beg. year (owned) | 134 | $ 186,163 | 40 | $ 54,828 | 40 | $ 34,606 | 32 | $ 15,341 |
| + Change w/o apprec. | | 7,207 | | 1,325 | | -904 | | 2,276 |
| + Appreciation | | -906 | | -54 | | 220 | | -350 |
| End year (owned) | 139 | $ 192,464 | 41 | $ 56,099 | 39 | $ 33,922 | 37 | $ 17,267 |
| End including leased | 140 | | | | | | | |
| Average number | 138 | | 117 | (all age groups) | | | | |

[25] See page 1 for a description of these groups of farms.

Total milk sold and milk sold per cow are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year.

**MILK PRODUCTION**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[26] | Average Non-Grazing Farms[26] |
|---|---|---|
| Total milk sold, pounds | 2,048,302 | 2,989,361 |
| Milk sold per cow, pounds | 15,231 | 21,697 |
| Average milk plant test, percent butterfat | 3.96% | 3.70% |

[26] See page 1 for a description of these groups of farms.

Monitoring and evaluating culling practices and experiences on an annual basis are important herd management tools. Culling rate can have an effect on both milk per cow and profitability.

**ANIMALS LEAVING THE HERD**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| | 27 Grazing Dairy Farms | | Average Non-Grazing Farms | |
|---|---|---|---|---|
| Item | Number | Percent[27] | Number | Percent[27] |
| Cows sold for beef | 24 | 17.5 | 36 | 26.1 |
| Cows sold for dairy | 6 | 4.5 | 1 | 0.6 |
| Cows died | 4 | 3.0 | 9 | 6.4 |
| Culling rate[28] | | 21.0 | | 33.0 |

[27]Percent of average number of cows in the herd. [28]Cows sold for beef plus cows died.

The cost of producing milk has been compiled using the whole farm method and is featured in the following table. Accrual receipts from milk sales can be compared with the accrual costs of producing milk per cow and per hundredweight of milk. Using the whole farm method, operating costs of producing milk are estimated by deducting nonmilk accrual receipts from total accrual operating expenses including expansion livestock purchased. Purchased inputs cost of producing milk are the operating costs plus depreciation. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of unpaid family labor, the value of operators' labor and management, and the interest charge for using equity capital.

**ACCRUAL RECEIPTS FROM DAIRY, COSTS OF PRODUCING MILK, AND PROFITABILITY**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[29] | | Average Non-Grazing Farms[29] | |
|---|---|---|---|---|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Accrual Cost of Producing Milk | | | | |
| Operating costs | $ 1,939 | $ 12.73 | $ 3,026 | $ 13.95 |
| Purchased inputs costs | $ 2,233 | $ 14.66 | $ 3,308 | $ 15.25 |
| Total Costs | $ 2,938 | $ 19.29 | $ 4,185 | $ 19.29 |
| Accrual Receipts From Milk | $ 2,808 | $ 18.43 | $ 3,828 | $ 17.65 |
| Net milk receipts | $ 2,648 | $ 17.39 | $ 3,631 | $ 16.74 |
| Net Farm Income without Appreciation | $ 574 | $ 3.77 | $ 520 | $ 2.40 |
| Net Farm Income with Appreciation | $ 770 | $ 5.06 | $ 720 | $ 3.32 |

[29] See page 1 for a description of these groups of farms.

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Evaluating these costs per unit of production enables an evaluation of the dairy enterprise.

**DAIRY RELATED ACCRUAL EXPENSES**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | 27 Grazing Dairy Farms[29] | | Average Non-Grazing Farms[29] | |
|---|---|---|---|---|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Purchased dairy grain & concentrate | $ 742 | $ 4.87 | $ 1,138 | $ 5.25 |
| Purchased dairy roughage | 122 | 0.80 | 96 | 0.44 |
| Total Purchased Dairy Feed | $ 865 | $ 5.68 | $ 1,235 | $ 5.69 |
| Purchased grain & concentrate as % of milk receipts | 30% | | 30% | |
| Purchased feed & crop expense | $ 1,039 | $ 6.82 | $ 1,461 | $ 6.73 |
| Purchased feed & crop expense as % of milk receipts | 39% | | 38% | |
| Breeding | $ 27 | $ 0.18 | $ 53 | $ 0.24 |
| Veterinary & medicine | 59 | 0.39 | 123 | 0.57 |
| Milk marketing | 160 | 1.05 | 197 | 0.91 |
| Bedding | 24 | 0.16 | 68 | 0.31 |
| Milking supplies | 49 | 0.32 | 88 | 0.41 |
| Cattle lease | 0 | 0.00 | 6 | 0.03 |
| Custom boarding | 70 | 0.46 | 28 | 0.13 |
| bST expense | 1 | 0.01 | 28 | 0.13 |
| Livestock professional fees | 9 | 0.06 | 15 | 0.07 |
| Other livestock expense | 28 | 0.18 | 30 | 0.14 |

**Capital and Labor Efficiency Analysis**

Capital efficiency factors measure how intensively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

**CAPITAL EFFICIENCY**

Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Item | Per Worker | Per Cow | Per Tillable Acre | Per Tillable Acre Owned |
|---|---|---|---|---|
| 27 Grazing Dairy Farms[30] | | | | |
| Farm capital | $ 376,550 | $ 8,316 | $ 3,738 | $ 6,271 |
| Real estate | | 3,988 | | 3,008 |
| Machinery & equipment | 65,022 | 1,436 | 645 | |
| Ratios: | | | | |
| Asset Turnover Ratio | Operating Expense | Interest Expense | | Depreciation Expense |
| 0.43 | 0.71 | 0.03 | | 0.09 |
| Average Non-Grazing Farms[30] | | | | |
| Farm capital | $ 383,792 | $ 11,059 | $ 4,167 | $ 7,860 |
| Real estate | | 5,072 | | 3,605 |
| Machinery & equipment | 74,767 | 2,154 | 812 | |
| Ratios: | | | | |
| Asset Turnover Ratio | Operating Expense | Interest Expense | | Depreciation Expense |
| 0.42 | 0.79 | 0.03 | | 0.06 |

[30] See page 1 for a description of these groups of farms.

**Capital and Labor Efficiency Analysis** (continued)

**LABOR FORCE INVENTORY AND ANALYSIS**
Intensive Grazing and Non-Grazing Dairy Farms, 2010

| Labor Force | Months | Age | Years of Education | Value of Labor & Management |
|---|---|---|---|---|
| 27 Grazing Dairy Farms | | | | |
| Operator number 1 | 13.4 | 48 | 14 | $ 36,012 |
| Operator number 2 | 3.8 | 47 | 14 | 10,815 |
| Family paid | 4.2 | | | |
| Family unpaid | 3.4 | | | |
| Hired | 10.8 | | | |
| Total | 35.6 | / 12 = 2.97 Worker Equivalent | | |
| | | 1.29 Operator/Manager Equivalent | | |
| Average Non-Grazing Farms | | | | |
| Total Labor Force | 47.7 | / 12 = 3.97 Worker Equivalent | | |
| Operator's Labor | | 1.70 Operator/Manager Equivalent | | |

| Labor Efficiency | 27 Grazing Dairy Farms Total | 27 Grazing Dairy Farms Per Worker | Average Non-Grazing Farms Total | Average Non-Grazing Farms Per Worker |
|---|---|---|---|---|
| Cows, average number | 134 | 45 | 138 | 35 |
| Milk sold, pounds | 2,048,302 | 689,664 | 2,989,361 | 752,514 |
| Tillable acres | 299 | 101 | 366 | 92 |

| Labor Costs | 27 Grazing Dairy Farms Per Cow | 27 Grazing Dairy Farms Per Cwt. | Average Non-Grazing Farms Per Cow | Average Non-Grazing Farms Per Cwt. |
|---|---|---|---|---|
| Value of operator(s) labor ($2,500/month) | $ 308 | $ 2.02 | $ 417 | $ 1.92 |
| Family unpaid ($2,500/month) | 62 | 0.40 | 43 | 0.20 |
| Hired | 246 | 1.62 | 407 | 1.88 |
| Total Labor | $ 616 | $ 4.04 | $ 866 | $ 3.99 |
| Machinery Cost | $ 590 | $ 3.88 | $ 791 | $ 3.65 |
| Total Labor & Machinery | $ 1,206 | $ 7.92 | $ 1,658 | $ 7.64 |
| Hired labor expense per hired worker equivalent | $26,493 | | $30,105 | |
| Hired labor expense as % of milk sales | 8.8% | | 10.6% | |

## COMPARATIVE ANALYSIS OF THE FARM BUSINESS

**Progress of the Farm Business**

Comparing your business with average data from regional DFBS cooperators that participated in both of the last two years can be helpful to establishing your goals for these parameters. It is equally important for you to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

**PROGRESS OF THE FARM BUSINESS**

Intensive Grazing and Non-Grazing Dairy Farms, 2009 & 2010[31]

| | Same 23 Grazing Dairy Farms | | Same 64 Non-Grazing Dairy Farms | |
|---|---|---|---|---|
| Selected Factors | 2009 | 2010 | 2009 | 2010 |
| Size of Business | | | | |
| Average number of cows | 101 | 107 | 136 | 140 |
| Average number of heifers | 88 | 87 | 112 | 120 |
| Milk sold, pounds | 1,653,919 | 1,774,611 | 2,912,164 | 3,047,433 |
| Worker equivalent | 2.88 | 2.85 | 3.99 | 3.99 |
| Total tillable acres | 263 | 275 | 364 | 375 |
| Rates of Production | | | | |
| Milk sold per cow, pounds | 16,439 | 16,660 | 21,418 | 21,794 |
| Hay DM per acre, tons | 2.4 | 2.4 | 2.7 | 2.7 |
| Corn silage per acre, tons | 18.0 | 19.2 | 18.3 | 18.9 |
| Labor Efficiency | | | | |
| Cows per worker | 35 | 37 | 34 | 35 |
| Milk sold/worker, pounds | 574,277 | 622,670 | 729,866 | 763,768 |
| Cost Control and Milk Price | | | | |
| Grain & concentrate purchased as % of milk sales | 35% | 28% | 40% | 30% |
| Dairy feed & crop expense per cwt. milk | $ 6.55 | $ 6.73 | $ 6.94 | $ 6.76 |
| Labor & machinery costs/cow | $ 1,442 | $ 1,405 | $ 1,644 | $ 1,651 |
| Operating cost of producing cwt. of milk | $ 11.85 | $ 13.22 | $ 13.21 | $ 13.99 |
| Milk receipts per cwt. | $ 12.75 | $ 16.99 | $ 12.77 | $ 16.71 |
| Capital Efficiency[32] | | | | |
| Farm capital per cow | $ 9,163 | $ 8,803 | $ 10,993 | $ 11,085 |
| Machinery & equipment per cow | $ 1,906 | $ 1,830 | $ 2,204 | $ 2,197 |
| Asset turnover ratio | 0.31 | 0.42 | 0.33 | 0.42 |
| Profitability | | | | |
| Net farm income without appreciation | $ 928 | $ 53,143 | $ -26,074 | $ 69,711 |
| Net farm income with appreciation | $ 2,258 | $ 72,969 | $ -25,882 | $ 101,213 |
| Labor & management income per operator/manager | $ -30,961 | $ 5,909 | $ -51,651 | $ 6,429 |
| Rate of return on equity capital with appreciation | -7.8% | 2.4% | -8.7% | 3.2% |
| Rate of return on all capital with appreciation | -5.0% | 3.0% | -5.0% | 3.6% |
| Financial Summary | | | | |
| Farm net worth, end year | $ 706,309 | $ 752,886 | $1,023,307 | $ 1,095,042 |
| Debt to asset ratio | 0.23 | 0.21 | 0.32 | 0.31 |
| Farm debt per cow | $ 2,076 | $ 1,923 | $ 3,456 | $ 3,412 |

[31]Farms participating both years.
[32]Average for the year.

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**

Same 23 Intensive Grazing Dairy Farms, 2009 & 2010

| | 2009 | | 2010 | |
|---|---|---|---|---|
| Item | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 101 | | 107 | |
| Cwt. Of Milk Sold | | 16,539 | | 17,746 |
| | | | | |
| ACCRUAL OPERATING RECEIPTS | | | | |
| Milk | $2,263 | $13.77 | $3,011 | $18.07 |
| Dairy cattle | 233 | 1.42 | 279 | 1.68 |
| Dairy calves | 15 | 0.09 | 24 | 0.14 |
| Other livestock | 15 | 0.09 | 4 | 0.02 |
| Crops | 0 | 0.00 | 19 | 0.12 |
| Miscellaneous receipts | 327 | 1.99 | 141 | 0.84 |
| Total Receipts | $2,852 | $17.35 | $3,478 | $20.88 |
| | | | | |
| ACCRUAL OPERATING EXPENSES | | | | |
| Hired labor | $ 237 | $ 1.44 | $ 235 | $ 1.41 |
| Dairy grain & concentrate | 788 | 4.79 | 843 | 5.06 |
| Dairy roughage | 127 | 0.77 | 113 | 0.68 |
| Nondairy feed | 0 | 0.00 | 0 | 0.00 |
| Professional nutritional services | 0 | 0.00 | 1 | 0.00 |
| Machine hire/rent/lease | 88 | 0.53 | 76 | 0.46 |
| Machinery repair & vehicle expense | 148 | 0.90 | 196 | 1.17 |
| Fuel, oil & grease | 104 | 0.64 | 121 | 0.72 |
| Replacement livestock | 1 | 0.01 | 8 | 0.05 |
| Breeding | 34 | 0.21 | 37 | 0.22 |
| Veterinary & medicine | 64 | 0.39 | 58 | 0.35 |
| Milk marketing | 167 | 1.01 | 181 | 1.09 |
| Bedding | 21 | 0.13 | 29 | 0.18 |
| Milking supplies | 64 | 0.39 | 59 | 0.35 |
| Cattle lease | 0 | 0.00 | 0 | 0.00 |
| Custom boarding | 8 | 0.05 | 2 | 0.01 |
| bST expense | 2 | 0.01 | 2 | 0.01 |
| Livestock professional fees | 9 | 0.05 | 12 | 0.07 |
| Other livestock expense | 25 | 0.15 | 20 | 0.12 |
| Fertilizer & lime | 95 | 0.58 | 91 | 0.55 |
| Seeds & plants | 34 | 0.21 | 45 | 0.27 |
| Spray/other crop expense | 19 | 0.11 | 18 | 0.11 |
| Crop professional fees | 14 | 0.09 | 11 | 0.07 |
| Land, building, fence repair | 53 | 0.32 | 51 | 0.31 |
| Taxes | 92 | 0.56 | 91 | 0.55 |
| Real estate rent/lease | 46 | 0.28 | 51 | 0.30 |
| Insurance | 67 | 0.41 | 58 | 0.35 |
| Utilities | 89 | 0.54 | 90 | 0.54 |
| Interest paid | 96 | 0.59 | 94 | 0.57 |
| Other professional fees | 11 | 0.07 | 15 | 0.09 |
| Miscellaneous | 23 | 0.14 | 41 | 0.25 |
| Total Operating Expenses | $2,526 | $15.37 | $2,651 | $15.91 |
| Expansion Livestock | 11 | 0.07 | 18 | 0.11 |
| Extraordinary Expense | 2 | 0.01 | 0 | 0.00 |
| Machinery Depreciation | 187 | 1.13 | 198 | 1.19 |
| Real Estate Depreciation | 117 | 0.71 | 112 | 0.67 |
| Total Expenses | $2,843 | $17.29 | $2,979 | $17.88 |
| Net Farm Income Without Appreciation | $ 9 | $ 0.06 | $ 499 | $ 2.99 |

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**

Same 64 Non-Grazing Dairy Farms, 2009 & 2010

| | 2009 | | 2010 | |
|---|---|---|---|---|
| Item | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 136 | | 140 | |
| Cwt. Of Milk Sold | | 29,122 | | 30,474 |
| | | | | |
| ACCRUAL OPERATING RECEIPTS | | | | |
| Milk | $2,933 | $13.69 | $3,839 | $17.62 |
| Dairy cattle | 196 | 0.92 | 221 | 1.01 |
| Dairy calves | 26 | 0.12 | 46 | 0.21 |
| Other livestock | 5 | 0.02 | 0 | 0.00 |
| Crops | 66 | 0.31 | 207 | 0.95 |
| Miscellaneous receipts | 418 | 1.95 | 133 | 0.61 |
| Total Receipts | $3,644 | $17.01 | $4,446 | $20.40 |
| | | | | |
| ACCRUAL OPERATING EXPENSES | | | | |
| Hired labor | $ 426 | $ 1.99 | $ 407 | $ 1.87 |
| Dairy grain & concentrate | 1,167 | 5.45 | 1,147 | 5.26 |
| Dairy roughage | 104 | 0.48 | 93 | 0.43 |
| Nondairy feed | 1 | 0.00 | 3 | 0.01 |
| Professional nutritional services | 0 | 0.00 | 0 | 0.00 |
| Machine hire/rent/lease | 97 | 0.45 | 111 | 0.51 |
| Machinery repair & vehicle expense | 190 | 0.89 | 213 | 0.98 |
| Fuel, oil & grease | 154 | 0.72 | 176 | 0.81 |
| Replacement livestock | 25 | 0.12 | 25 | 0.12 |
| Breeding | 52 | 0.24 | 54 | 0.25 |
| Veterinary & medicine | 126 | 0.59 | 127 | 0.58 |
| Milk marketing | 197 | 0.92 | 197 | 0.90 |
| Bedding | 65 | 0.31 | 66 | 0.30 |
| Milking supplies | 79 | 0.37 | 90 | 0.41 |
| Cattle lease | 7 | 0.03 | 7 | 0.03 |
| Custom boarding | 35 | 0.16 | 31 | 0.14 |
| bST expense | 29 | 0.14 | 29 | 0.13 |
| Livestock professional fees | 13 | 0.06 | 16 | 0.07 |
| Other livestock expense | 45 | 0.21 | 31 | 0.14 |
| Fertilizer & lime | 103 | 0.48 | 109 | 0.50 |
| Seeds & plants | 64 | 0.30 | 76 | 0.35 |
| Spray/other crop expense | 44 | 0.21 | 42 | 0.19 |
| Crop professional fees | 5 | 0.02 | 6 | 0.03 |
| Land, building, fence repair | 49 | 0.23 | 55 | 0.25 |
| Taxes | 72 | 0.34 | 87 | 0.40 |
| Real estate rent/lease | 36 | 0.17 | 45 | 0.20 |
| Insurance | 52 | 0.24 | 56 | 0.26 |
| Utilities | 112 | 0.52 | 123 | 0.57 |
| Interest paid | 129 | 0.60 | 154 | 0.71 |
| Other professional fees | 18 | 0.08 | 20 | 0.09 |
| Miscellaneous | 25 | 0.12 | 25 | 0.11 |
| Total Operating Expenses | $3,522 | $16.45 | $3,620 | $16.61 |
| Expansion Livestock | 19 | 0.09 | 36 | 0.17 |
| Extraordinary Expense | 5 | 0.03 | 3 | 0.01 |
| Machinery Depreciation | 199 | 0.93 | 187 | 0.86 |
| Real Estate Depreciation | 90 | 0.42 | 102 | 0.47 |
| Total Expenses | $3,835 | $17.92 | $3,948 | $18.12 |
| Net Farm Income Without Appreciation | $ -192 | $ -0.90 | $ 499 | $ 2.29 |

**Grazing Farm Business Chart**

The Farm Business Chart is a tool, which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column, which represents your current level of performance. The five figures in each column represent the average of each 20 percent or quintile of farms included in the regional summary. Use this information to identify business areas where more challenging goals are needed.

**FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS**

27 Intensive Grazing Dairy Farms, 2010

| Size of Business | | | | | | | | Rates of Production | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Worker Equiv-alent | No. of Cows | No. of Heifers | Pounds Milk Sold | Hay Acres | All Pas-ture & Hay Acres | Nontillable Pasture & Tillable Acres | Stock-ing Rate | Pounds Milk Sold Per Cow | Tons Hay DM/ Acre | Tons Corn Silage Per Acre |
| (14)[33] | (12) | (12) | (12) | (11) | (11) | (11) | (11) | (12) | (11) | (11) |
| 5.91 | 390 | 265 | 5,305,343 | 476 | 686 | 754 | 5.4 | 21,310 | 3.8 | 28 |
| 3.41 | 132 | 116 | 2,078,742 | 204 | 269 | 320 | 3.9 | 19,855 | 2.8 | 24 |
| 2.57 | 85 | 70 | 1,445,924 | 146 | 218 | 262 | 2.9 | 18,349 | 2.0 | 20 |
| 2.04 | 55 | 42 | 1,105,197 | 103 | 170 | 196 | 2.3 | 16,083 | 1.8 | 18 |
| 1.42 | 44 | 32 | 753,820 | 59 | 115 | 127 | 1.4 | 12,205 | 1.0 | 13 |

| Labor Efficiency and Costs | | | | Cost Control | | | | |
|---|---|---|---|---|---|---|---|---|
| Cows Per Worker | Pounds Milk Sold Per Worker | Hired Labor Cost Per Worker | Hired Labor Cost as % of Milk Sales | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. |
| (14) | (14) | (14) | (14) | (12) | (14) | (14) | (12) | (12) |
| 75 | 1,032,625 | $1,224 | 0% | 20% | $386 | $831 | $856 | $5.76 |
| 44 | 761,325 | 16,986 | 3 | 27 | 553 | 1,337 | 1,103 | 6.26 |
| 35 | 673,313 | 24,907 | 5 | 31 | 713 | 1,541 | 1,220 | 6.74 |
| 30 | 521,221 | 31,583 | 9 | 33 | 824 | 1,873 | 1,304 | 7.49 |
| 21 | 352,818 | 49,019 | 15 | 40 | 1,073 | 2,360 | 1,604 | 9.07 |

| Value and Cost of Milk Production | | | | Profitability | | | |
|---|---|---|---|---|---|---|---|
| Net Milk Receipts Per Cwt. | Milk Receipts Per Cow | Operating Cost Milk Prod. Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income with Appreciation | Net Farm Income w/o Appreciation | Labor & Mgmt. Income Per Operator | Labor & Mgmt. Income Per Oper. Per Cow |
| (12) | (12) | (12) | (12) | (4) | (4) | (4) | (4) |
| $18.80 | $3,755 | $9.92 | $15.69 | $350,774 | $264,192 | $175,899 | $766 |
| 17.39 | 3,461 | 11.77 | 18.76 | 102,944 | 69,915 | 36,895 | 277 |
| 16.78 | 3,243 | 13.26 | 20.37 | 68,170 | 53,085 | 10,832 | 24 |
| 16.25 | 2,878 | 14.28 | 22.45 | 41,640 | 40,461 | -11,119 | -177 |
| 15.42 | 2,314 | 17.55 | 30.06 | -10,386 | -15,542 | -45,331 | -890 |

| Profitability, continued | | | Capital Efficiency | | | Financial Summary | | |
|---|---|---|---|---|---|---|---|---|
| Rate Return on Equity Capital Without Ap-preciation | Rate Return on All Capital Without Ap-preciation | Govern-ment Re-ceipts Per Cwt. | Farm Capital Per Cow | Machinery & Equip-ment Per Cow | Asset Turn-over Ratio | Debt to Asset Ratio | Farm Debt Per Cow | Change in Net Worth with Appreciation |
| (4) | (4) | (4) | (14) | (14) | (14) | (7) | (7) | (8) |
| 17% | 10% | $1.13 | $6,190 | $570 | 0.63 | 0.00 | $41 | $280,259 |
| 5 | 5 | 0.29 | 8,031 | 1,470 | 0.47 | 0.10 | 854 | 72,163 |
| -1 | 1 | 0.15 | 9,536 | 1,951 | 0.42 | 0.21 | 2,170 | 37,453 |
| -4 | -2 | 0.11 | 11,540 | 2,423 | 0.36 | 0.41 | 3,470 | 18,311 |
| -39 | -8 | 0.07 | 15,663 | 3,864 | 0.25 | 0.62 | 6,732 | -12,501 |

[33]Page number of the participant's DFBS where the factor is located.

## INCOME AND EXPENSE PROFILES

Use the following two tables to make an income and expense profile for your dairy farm business. The figures in the quintile columns represent the average of the top 20 percent to the bottom 20 percent for each receipt and expenditure category. Each line is computed independently. The farms that comprise the top 20 percent in milk sales do not necessarily make up the top 20 percent of any other category. On each line circle the income and cost measures closest to the one for your farm. Then draw a vertical line connecting your circles on each table. The strongest profile will be a relatively straight line on the left side of the table.

### RECEIPTS AND EXPENSES PER COW

27 Intensive Grazing Dairy Farms, 2010

| | QUINTILE | | | | |
|---|---|---|---|---|---|
| Item | 1 | 2 | 3 | 4 | 5 |
| Accrual Operating Receipts | | | | | |
| Milk | $3,755 | $3,461 | $3,243 | $2,878 | $2,314 |
| Dairy cattle | 568 | 360 | 256 | 180 | 93 |
| Dairy calves | 103 | 57 | 26 | 10 | -17 |
| Other livestock | 176 | 10 | 0 | 0 | -14 |
| Crops | 202 | 84 | 32 | -20 | -201 |
| Miscellaneous receipts | 432 | 223 | 143 | 86 | 35 |
| Total Operating Receipts | $4,535 | $4,008 | $3,693 | $3,330 | $2,761 |
| Accrual Operating Expenses | | | | | |
| Hired labor | $3 | $80 | $160 | $241 | $448 |
| Dairy grain & concentrate | 548 | 825 | 936 | 1,105 | 1,280 |
| Dairy roughage | 0 | 0 | 8 | 116 | 469 |
| Nondairy feed | 0 | 0 | 0 | 0 | 2 |
| Professional nutritional services | 0 | 0 | 0 | 0 | 3 |
| Machinery hire/rent/lease | 1 | 10 | 48 | 110 | 195 |
| Mach. repair & farm vehicle exp. | 100 | 156 | 189 | 262 | 365 |
| Fuel, oil & grease | 60 | 102 | 124 | 144 | 194 |
| Replacement livestock | 0 | 0 | 0 | 4 | 60 |
| Breeding | 5 | 20 | 38 | 58 | 85 |
| Veterinary & medicine | 27 | 46 | 67 | 94 | 140 |
| Milk marketing | 128 | 165 | 191 | 223 | 293 |
| Bedding | 1 | 9 | 36 | 46 | 67 |
| Milking supplies | 15 | 46 | 66 | 101 | 178 |
| Cattle lease | 0 | 0 | 0 | 0 | 0 |
| Custom boarding | 0 | 0 | 0 | 0 | 90 |
| bST expense | 0 | 0 | 0 | 0 | 24 |
| Livestock professional fees | 0 | 0 | 14 | 27 | 61 |
| Other livestock expense | 0 | 8 | 26 | 45 | 92 |
| Fertilizer & lime | 8 | 59 | 91 | 172 | 213 |
| Seeds & plants | 5 | 13 | 32 | 52 | 95 |
| Spray/other crop expenses | 0 | 2 | 14 | 28 | 69 |
| Crop professional fees | 0 | 0 | 0 | 1 | 47 |
| Land, building, fence repair | 6 | 22 | 42 | 80 | 124 |
| Taxes | 35 | 58 | 88 | 116 | 160 |
| Real estate rent/lease | 0 | 6 | 25 | 47 | 143 |
| Insurance | 24 | 37 | 49 | 58 | 104 |
| Utilities | 51 | 78 | 99 | 125 | 181 |
| Interest | 2 | 48 | 99 | 154 | 338 |
| Other professional fees | 0 | 4 | 13 | 23 | 46 |
| Miscellaneous | 4 | 11 | 21 | 34 | 83 |
| Total Operating Expenses | $2,167 | $2,490 | $2,761 | $2,971 | $3,656 |
| Expansion livestock | 0 | 0 | 0 | 0 | 68 |
| Extraordinary expense | 0 | 0 | 0 | 0 | 0 |
| Machinery depreciation | 56 | 118 | 184 | 231 | 439 |
| Building depreciation | 5 | 29 | 58 | 122 | 463 |
| Net Farm Income w/o Appreciation | $1,312 | $878 | $656 | $320 | $-396 |

**RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD**

27 Intensive Grazing Dairy Farms, 2010

| Item | QUINTILE 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Accrual Operating Receipts | | | | | |
| Milk | $19.90 | $18.42 | $17.85 | $17.33 | $16.79 |
| Dairy cattle | 3.31 | 2.14 | 1.55 | 0.98 | 0.59 |
| Dairy calves | 0.74 | 0.32 | 0.14 | 0.05 | -0.12 |
| Other livestock | 1.44 | 0.07 | 0.00 | 0.00 | -0.07 |
| Crops | 1.09 | 0.48 | 0.20 | -0.12 | -1.21 |
| Miscellaneous receipts | 2.38 | 1.36 | 0.78 | 0.56 | 0.21 |
| Total Operating Receipts | $24.82 | $22.26 | $20.95 | $19.92 | $18.54 |
| Accrual Operating Expenses | | | | | |
| Hired labor | $0.02 | $0.44 | $0.86 | $1.75 | $2.74 |
| Dairy grain & concentrate | 3.79 | 4.80 | 5.50 | 5.95 | 6.87 |
| Dairy roughage | 0.00 | 0.00 | 0.05 | 0.60 | 3.18 |
| Nondairy feed | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Professional nutritional services | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 |
| Machinery hire/rent/lease | 0.01 | 0.05 | 0.29 | 0.65 | 1.24 |
| Mach. repair & farm vehicle exp. | 0.65 | 0.84 | 1.16 | 1.62 | 2.03 |
| Fuel, oil & grease | 0.38 | 0.55 | 0.66 | 0.84 | 1.27 |
| Replacement livestock | 0.00 | 0.00 | 0.00 | 0.03 | 0.35 |
| Breeding | 0.03 | 0.12 | 0.22 | 0.32 | 0.40 |
| Veterinary & medicine | 0.16 | 0.28 | 0.42 | 0.48 | 0.82 |
| Milk marketing | 0.83 | 0.99 | 1.10 | 1.34 | 1.53 |
| Bedding | 0.00 | 0.07 | 0.19 | 0.27 | 0.37 |
| Milking supplies | 0.12 | 0.28 | 0.36 | 0.51 | 1.04 |
| Cattle lease | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Custom boarding | 0.00 | 0.00 | 0.00 | 0.00 | 0.74 |
| bST expense | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 |
| Livestock professional fees | 0.00 | 0.00 | 0.09 | 0.15 | 0.34 |
| Other livestock expense | 0.00 | 0.05 | 0.14 | 0.27 | 0.54 |
| Fertilizer & lime | 0.05 | 0.33 | 0.52 | 0.91 | 1.33 |
| Seeds & plants | 0.03 | 0.08 | 0.19 | 0.30 | 0.50 |
| Spray/other crop expenses | 0.00 | 0.01 | 0.07 | 0.17 | 0.39 |
| Crop professional fees | 0.00 | 0.00 | 0.00 | 0.01 | 0.27 |
| Land, building, fence repair | 0.03 | 0.14 | 0.27 | 0.40 | 0.65 |
| Taxes | 0.20 | 0.39 | 0.50 | 0.59 | 0.94 |
| Real estate rent/lease | 0.00 | 0.03 | 0.14 | 0.29 | 0.79 |
| Insurance | 0.15 | 0.24 | 0.28 | 0.35 | 0.52 |
| Utilities | 0.34 | 0.45 | 0.59 | 0.67 | 1.01 |
| Interest | 0.01 | 0.25 | 0.68 | 1.00 | 1.99 |
| Other professional fees | 0.00 | 0.03 | 0.07 | 0.14 | 0.26 |
| Miscellaneous | 0.02 | 0.06 | 0.11 | 0.20 | 0.50 |
| Total Operating Expenses | $13.43 | $15.09 | $15.81 | $17.08 | $20.66 |
| Expansion livestock | 0.00 | 0.00 | 0.00 | 0.00 | 0.41 |
| Extraordinary expense | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Machinery depreciation | 0.33 | 0.71 | 1.07 | 1.42 | 2.61 |
| Building depreciation | 0.03 | 0.15 | 0.37 | 0.82 | 2.43 |
| Net Farm Income w/o Appreciation | $7.09 | $5.37 | $3.63 | $2.04 | $-2.27 |

## SUPPLEMENTARY INFORMATION

Each year DFBS cooperators volunteer to complete supplementary data collection forms looking at selected management aspects of the business or specific research areas being studied. This is in addition to the normal DFBS data collection form. Two areas that were examined this year were the source of dairy replacements and the breakdown of the milk income and marketing expenses. Following is a summary of this information.

### SOURCE OF DAIRY REPLACEMENTS

29 New York Dairy Farms, 2010

| Animals Entering Herd | Average |
|---|---|
| Number calving in 2010 for first time | 243 |
| Animals purchased, percent[34] | 1% |
| Animals raised by farm, percent[35] | 99% |
| Current Heifer Inventory | |
| Raised on dairy, percent | 92% |
| Raised by a custom grower, percent | 8% |

[34]Animals purchased are animals purchased from a different farm and were not the farm's genetics.
[35]Animals raised by farm are animals that were born on the farm and entered the herd, which includes animals raised by the farm or custom grower.

On the average farm, 243 animals calved for the first time in 2010. The breakdown of these animals for source was one percent purchased and 99 percent raised by the farm. Of the current heifer inventory, 92 percent were raised on the dairy and 8 percent were being raised by a custom grower. There is increased interest in evaluating the dairy replacement enterprise.

**Milk Income and Marketing Expense Breakdown**

Starting January 1st, 2000, the Northeast switched to multiple components pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 14` intensive grazing farms filled out a detailed form for all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following table. The table is divided into five different areas, each representing a different area of income or expenses.

The first section looks at the value of the milk components on a per cwt. basis. The second area looks at the Producer Price Differential. The third area looks at the premiums a farm receives. Any premiums not specifically noted as quality or volume are included in market premiums. The fourth area looks at the expenses associated with marketing milk. The line item in this section is the expenses associated with utilizing forward contracting or hedging programs to market milk, such as commission or broker fees. The fifth area is the patronage dividends or refunds from the milk cooperatives. Equity purchased in the milk cooperative utilizing a monthly deduction from the milk check or a percent of the patronage dividend is treated as a capital purchase and is not a milk marketing expense. The cumulative total for these five areas is the net price received on farms. Your net farm price can be found on page 12 of your farm's DFBS report.

The table on page 44 reports the averages for these different areas.

For your individual farm, compare your accrual numbers following this same format to look at how you compare to other farms in your region and to identify possible areas to generate additional revenue.

**AVERAGE[36] MILK INCOME AND MARKETING REPORT**
14 Intensive Grazing Dairy Farms, 2010

| | Pounds | Percent | Price/Pound | Total | $/Cwt of Milk |
|---|---|---|---|---|---|
| **BASE FARM PRICE** | | | | | |
| Butterfat | 113,766 | 3.96 | $ 1.87 | $213,249 | $ 7.43 |
| Protein | 92,377 | 3.22 | $ 2.28 | $210,797 | $ 7.34 |
| Solids | 164,877 | 5.74 | $ 0.17 | $ 28,471 | $ 0.99 |
| **Total Component Contribution** | | | | | $15.77 |
| **PPD** | 2,869,988 | | | $ 46,445 | $ 1.62 |
| **Base Farm Price** | | | | | $17.39 |
| **Premiums** | | | | | |
| Quality | | | | $ 7,956 | $ 0.28 |
| Volume | | | | $ 8,741 | $ 0.30 |
| Market Premiums | | | | $ 20,395 | $ 0.71 |
| **Total Premiums** | | | | | $ 1.29 |
| **BASE FARM PRICE + PREMIUM** | | | | | $18.68 |
| **Deductions** | | | | | |
| Promo | | | | $ 5,057 | $ 0.18 |
| Hauling + Stop Charges | | | | $20,290 | $ 0.71 |
| Market Fees & Coop Dues | | | | $ 3,785 | $ 0.13 |
| **Total Deductions** | | | | | $ 1.02 |
| **BASE FARM PRICE + PREMIUMS - DEDUCTIONS** | | | | | $17.66 |
| **Marketing Programs** | | | | | |
| Futures Contracts, Forward Contracting, Etc. | | | | $ 0.00 | $ 0.00 |
| **Total Marketing Income** | | | | | $ 0.00 |
| **Patronage Dividends** | | | | $ 2,151 | $ 0.07 |
| **NET PRICE RECEIVED ON FARM, ALL SOURCES** | | | | | **$17.74** |
| **PPD - Hauling, $ per cwt.** | | | | | $ 0.91 |
| **PPD - Hauling + Market Premiums, $ per cwt.** | | | | | $ 1.62 |
| **Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.** | | | | | $ 1.90 |

[36]Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals. However, detail in the "$/Cwt of Milk" column will result in the totals.

## IDENTIFY AND SET GOALS

If businesses are to be successful, they must have direction. Written goals help provide businesses with an identifiable direction over both the long and short term. Goal setting is as important on a dairy farm as it is in other businesses. Written goals are a tool which farm operators can use to ensure that the business continues to move in the desired direction. Goals should be SMART:

1. Goals should be **S**pecific.

2. Goals should be **M**easurable.

3. Goals should be **A**chievable but challenging.

4. Goals should be **R**ewarding.

5. Goals should be **T**imed with a designated date by which the goal will be achieved.

Goal setting on a dairy farm should be a process for writing down and agreeing on goals that you have already given some thought to. It is also important to remember that once you write out your goals they are not cast in concrete. If a change takes place which has a major impact on the farm business, the goals should be reworked to accommodate that change. Refer to your goals as often as necessary to keep the farm business progressing.

It is important to identify both objectives (long-range) and goals (short-range) when looking at the future of your farm business.

A suggested format for writing out your goals is as follows:

a. Begin with a mission statement which describes why the business exists based on the preferences and values of the owners.

b. Identify 4-6 objectives.

c. Identify SMART goals.

Worksheet for Setting Goals

I. Mission and Objectives

_____

_____

_____

_____

_____

_____

_____

_____

Worksheet for Setting Goals (Continued)

II. Goals

| What | How | When | Who is Responsible |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |

Summarize Your Business Performance

The Farm Business Chart on page 40 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

| Strengths: | Needs improvement: |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

## GLOSSARY AND LOCATION OF COMMON TERMS

**Accounts Payable** - Open accounts or bills owed to feed and supply firms, cattle dealers, veterinarians and other providers of farm services and supplies.

**Accounts Receivable** - Outstanding receipts from items sold or sales proceeds not yet received, such as the payment for December milk sales received in January.

**Accrual Expenses** - (defined on page 19)

**Accrual Receipts** - (defined on page 19)

**Annual Cash Flow Statement** - (defined on page 27)

**Appreciation** - (defined on page 20)

**Asset Turnover Ratio** - The ratio of total farm income to total farm assets, calculated by dividing total accrual operating receipts plus appreciation by average total farm assets.

**Balance Sheet** - A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

**Capital Efficiency** - The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital.

**Cash From Nonfarm Capital Used in the Business** - Transfers of money from nonfarm savings or investments to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

**Cash Flow Coverage Ratio** - (defined on page 28)

**Cash Paid** - (defined on page 17)

**Cash Receipts** - (defined on page 19)

**Change in Accounts Payable** - (defined on page 18)

**Change in Accounts Receivable** - (defined on page 19)

**Change in Inventory** - (defined on page 19)

**Cost of Term Debt** – A weighted average of the cost of borrowed capital to the farm. Calculate by multiplying end of year principal of each loan that is borrowed by the interest rate for each loan at that time. Add up each amount that is calculated for each loan and then divide by total amount of borrowed funds. Do not include accounts payable, operating debt or advanced government receipts. This information is found on pages 8 & 9 of the data entry form.

**Culling Rate** – (defined on page 33)

**Current Portion** - (defined on page 23)

**Current Ratio** – Measures the extent to which current farm assets, if liquidated, would cover current farm liabilities. Calculated as current farm assets at end year divided by current farm liabilities at end year.

**Dairy (farm)** - A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.

**Dairy Cash-Crop (farm)** - Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed 10 percent of accrual milk receipts.

**Debt Coverage Ratio** – (defined on page 28)

**Debt Per Cow** - Total end-of-year debt divided by end-of-year number of cows.

**Debt to Asset Ratios** - (defined on page 25)

**Depreciation Expense Ratio** – Machinery and building depreciation divided by total accrual receipts.

**Dry Matter** - The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

**Equity Capital** - The farm operator/manager's owned capital or farm net worth.

**Expansion Livestock** - Purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year.

**Farm Debt Payments as Percent of Milk Sales** - Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see page 28.

**Farm Debt Payments Per Cow** - Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year.

**Financial Lease** - A long-term non-cancelable contract giving the lessee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

**Hired Labor Expense per Hired Worker Equivalent** – The total cost to the farm per hired worker equivalent. Divide accrual hired labor expense by number of hired plus family paid worker equivalents.

**Hired Labor Expense as % of Milk Sales** – The percentage of the gross milk receipts that is used for labor expense. Divide accrual hired labor expense by accrual milk sales.

**Income Statement** - A complete and accurate account of farm business receipts and expenses used to measure profitability over a period of time such as one year or one month.

**Interest Expense Ratio** – Accrual interest expense divided by total accrual receipts.

**Labor and Management Income** - (defined on page 22)

**Labor and Management Income Per Operator** - The return to the owner/manager's labor and management per full-time operator.

**Labor Efficiency** - Production capacity and output per worker.

**Leverage Ratio** – (defined on page 25)

**Liquidity** - Ability of business to generate cash to make debt payments or to convert assets to cash.

**Net Farm Income** - (defined on page 20)

**Net Farm Income from Operations Ratio** – (defined on page 23)

**Net Milk Receipts** – Accrual milk receipts less milk marking expense.

**Net Worth** - The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

**Operating Costs of Producing Milk** - (defined on page 34)

**Operating Expense Ratio** – Total accrual expenses less interest and machinery and building depreciation, divided by total accrual receipts.

**Opportunity Costs** - The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

**Other Livestock Expenses** - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include DHIC, registration fees and transfers.

**Owner/Operator Resources/cwt.** - The total value of equity, management, and labor contributed to the farm from all owner/operators. This measure is calculated by adding the interest on equity capital to the value of labor and management for all owner/operators and dividing by the hundredweight produced during the year.

**Part-Time Dairy (farm)** - Dairy farming is the primary enterprise, cropland is owned but operating and managing this farm is not a full-time occupation for one or more people.

**Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments** - All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

**Profitability** - The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all the costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

**Purchased Inputs Cost of Producing Milk** - (defined on page 34)

**Renter** - Farm business owner/operator owns no tillable land and commonly rents all other farm real estate.

**Repayment Analysis** - An evaluation of the business' ability to make planned debt payments.

**Replacement Livestock** - Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

**Return on Equity Capital** - (defined on page 23)

**Return on Total Capital** - (defined on page 23)

**Solvency** - The extent or ability of assets to cover or pay liabilities. Debt/asset and leverage ratios are common measures of solvency.

**Stocking Rate** – (defined on page 32)

**Total Costs of Producing Milk** - (defined on page 34)

**Total Labor Cost/cwt.** - The total cost of all labor used on the farm on a per cwt. basis. The value of unpaid labor at $2,500 per month plus the value of operator(s) labor at $2,500 per month plus total hired labor expense divided by the number of cwt. produced.

**Whole Farm Method** - A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

**Working Capital** – A theoretical measure of the amount of funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities. Calculated as current farm assets at end year less current farm liabilities at end year.

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## OTHER A.E.M. EXTENSION BULLETINS

| EB No | Title | Fee (if applicable) | Author(s) |
|---|---|---|---|
| 2011-05 | Dairy Farm Business Summary, Hudson and Central NY Region, 2010 | ($12.00) | Knoblauch, W., Conneman, G., Putnam, L., Karszes, J., Buxton, S., Kiraly, M. Shoen, K., Westenbroek, P., Walsh, J., Overton, R. and C. Dymond |
| 2011-04 | Dairy Farm Business Summary, New York Small Herd Farms, 120 Cows or Fewer, 2010 | ($16.00) | Knoblauch, W., Putnam, L., Karszes, J., Kiraly, M. and C. Dymond |
| 2011-03 | Cost of Establishment and Production of Vinifera Grapes in the Finger Lakes Region of New York - 2010 | | White, G. |
| 2011-02 | Dairy Farm Business Summary, Western New York Region, 2010 | ($12.00) | Knoblauch, W., Putnam, L., Karszes, J., Hanchar, J., Grace, J., Carlberg., V., Petzen, J., Welch, D., Overton, R. and C. Dymond |
| 2011-01 | Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2010 | ($16.00) | Karszes, J., Knoblauch, W., Putnam, L. and A. Angell |
| 2010-19 | Legislative Actions on Overtime Pay and Collective Bargaining and Their Implications for Farm Employers In New York State, 2009-2010 | | Telega, L. and T. Maloney |
| 2010-18 | Dairy Farm Business Summary, New York Dairy Farm Renters, 2009 | ($16.00) | Knoblauch, W. and L. Putnam |
| 2010-17 | New York Economic Outlook, 2011 | | Extension Staff |
| 2010-16 | A Compilation of Smart Marketing Articles January 2008 – October 2010 | | Park, K. and T. Schmitt |
| 2010-15 | Economic analysis of the financial impact of the grape leafroll virus (GLRV) in the Finger Lakes region of New York | | Gómez, M., Atallah, S., Martinson, T., Fuchs, M. and G. White |
| 2010-14 | An Economic Examination of Alternative Organic Cropping Systems in New York State | | Chan, S., Caldwell, B. and B. Rickard |
| 2010-13 | Organic Agriculture in New York State | | Henehan, B. and J. Li |
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