DAIRY FARM BUSINESS SUMMARY

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# INTENSIVE GRAZING FARMS NEW YORK 2005

*TENTH ANNIVERSARY*

**George Conneman**
**James Grace**
**Jason Karszes**
**Jacob Schuelke**
**David L. Munsee**
**Linda D. Putnam**
**A. Edward Staehr**
**Janice Degni**

**Department of Applied Economics and Management**
**College of Agriculture and Life Sciences**
**Cornell University, Ithaca, New York 14853-7801**

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For information on how to obtain additional copies, please contact:

Linda Putnam
Cornell University
Department of Applied Economics and Management
305 Warren Hall
Ithaca, NY 14853-7801

E-mail: ldp2@cornell.edu
Fax: 607-255-1589
Voice: 607-255-8429

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**Intensive Grazing Farms**
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**ACKNOWLEDGEMENT**

This report was written by the Intensive Grazing Committee consisting of George Conneman, Professor, Farm Management; Jason Karszes, Senior Extension Associate, PRO-DAIRY; James Grace, Extension Educator, Steuben, Chemung and Schuyler Counties; Jacob Schuelke, Extension Educator, South Central New York Area Dairy and Field Crop Extension Program; David Munsee, Extension Educator, Chautauqua County; Janice Degni, South Central New York Area Dairy and Field Crop Extension Program; Ed Staehr, Extension Associate, Applied Economics and Management; and Linda Putnam, Extension Support Specialist, Farm Management. The committee appreciates the assistance from all the Cornell Cooperative Extension Educators that collected the Dairy Farm Business Summary data, as well as the following that collected the grazing practices survey data: Consultant: George Allhusen; Extension Educators: Sandy Buxton, Mariane Kiraly, Peggy Murray, Molly Ames and Joan Petzen.

***On the tenth anniversary of the New York Intensive Grazing Publication, a special "thank you" to Stuart Smith, retired Senior Extension Associate. Stuart began analysis of intensive grazing farms with a one-page table summarizing 25 grazing farms with 1992 Dairy Farm Business Summary (DFBS) data. This was continued with 1993 DFBS data and the analysis grew to a more detailed analysis with 1994 and 1995 DFBS data. "Thank you" also to Carl Crispell, retired Extension Educator, for continuing the analysis in publication form with 1996 DFBS data. His co-authors were George Conneman, James Grace, Kate Parsons, and Linda Putnam.***

# 2005 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.

This year we are celebrating the tenth year that a study of intensive grazing farms has been done. The table on page 4 provides a summary of the intensive grazing farms over the ten-year period.

The farms included in the study are a subset of New York State farms participating in the Dairy Farm Business Summary (DFBS). Forty-five 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% of the forage consumed during the growing season was from grazing. Operators of these 45 farms were asked to complete a grazing practices survey. Thirty-four of the New York farms did complete it. The investigators had special interest in practices used on farms with above average profitability. **Therefore the study centered on 42 New York farms which were not organic farms, were not first year grazers and on which at least 30 percent of forage consumed during the grazing season was grazed. The "Average Top 30% Farms" are thirteen farms with the highest labor and management incomes per operator per cow and are compared to the average of the 42 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 project in 2004 and 2005. 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 10. The third section, Case Studies, describes three 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 2005 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 from Dairy Farm Business Summary (DFBS) grazing farms that participated for the last two years can be helpful in comparing 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 25 farms that were grazing in both 2004 and 2005 and participated in the DFBS project for both years.

These 25 farms decreased in herd size from 106 cows in 2004 to 103 cows in 2005. However production per cow increased 3.8 percent to 16,469 pounds per cow from 15,868. This enabled the total pounds of milk sold off the farm to increase by 1.1 percent. Heifer numbers showed an increase of 12 from 73 to 85 or a 16% increase.

There was a 3.9 percent decrease in worker equivalents, to 2.72, allowing cows per worker to increase by one to 38. Reflecting the increase in production per cow and fewer workers, the milk sold per worker increased 5.2 percent to 623,401 pounds. Hired labor costs per worker equivalent increased 1.9 percent and on a hundredweight basis the increase was 1 cent, but as a percentage of milk sales it was a 5.1 percent increase. This was due to a decrease of 4 percent in the price per hundredweight of milk sold, from $17.37 to $16.68.

The 2005 growing season was variable across New York State. Parts received adequate moisture and other sections were dry. In the drier areas, pasture and field crop yields were reduced as indicated by the lower average hay and corn silage yields.

Gross milk income per cow only decreased $9 per cow as the increase in production per cow offset the price decrease. There was strong demand for beef all of 2005. Sales of cull cows increased $100 per cow, nearly a 50 percent increase, to $308. Calf sales were up as well, going from $55 in 2004 to $88 per cow in 2005. Government receipts increased $.06 per cwt to $0.47. MILC payments were $.03 in June and $.04 in December.

Income per hundredweight for 2005 was, milk sales $16.68, cattle $1.87, calves $0.53, and government payments $0.47 for a total income of $19.55 versus income of $19.33 for the same items in 2004, a 1.1 percent increase. The total farm operating costs of producing a hundredweight of milk was $14.55, a 2.4 percent increase from 2004's $14.21.

The amount of investment per cow continued its upward trend, increasing from $6,664 to $7,514 or 12.8 percent. This resulted from the value of machinery and equipment increasing and cattle and land being worth more than in 2004. Debt per cow increased $164 to $2,336. In spite of this increase in debt per cow, farm net worth increased 12.4 percent, an increase of $63,478 per farm.

The increase in gross farm income was not enough to offset the increase in gross farm expenses, resulting in lower profitability for 2005 than 2004.

**Profitability Measures**

- Net farm income without appreciation decreased 4.9 percent to $61,439.
- Net farm income per cow without appreciation decreased from $609 to $596.
- Net farm income with appreciation increased 2.5 percent to $94,509.
- Labor and management income per operator decreased from $25,038 to $21,934.
- Rate of return on equity capital without appreciation decreased from 3.8 percent to 3.1 percent.
- Rate of return on all capital without appreciation decreased from 4.2 percent to 3.9 percent.

In summary, in general 2005 was not as profitable as 2004 for most grazers. 2004 was a record high milk price year with excellent grazing conditions all season. However, 2005 was a better year than 2002 and 2003.

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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 25 Grazing Dairy Farms, 2004 & 2005

| Selected Factors | Average of 25 Farms 2004 | Average of 25 Farms 2005 | Percent Change |
|---|---|---|---|
| Size of Business | | | |
| Average number of cows | 106 | 103 | -2.8 |
| Average number of heifers | 73 | 85 | 16.4 |
| Milk sold, lbs. | 1,676,923 | 1,695,652 | 1.1 |
| Worker equivalent | 2.83 | 2.72 | -3.9 |
| Total nontillable and tillable pasture & hay acres | 255 | 268 | 5.1 |
| Total nontillable pasture & tillable acres | 308 | 322 | 4.6 |
| Rates of Production | | | |
| Milk sold per cow, lbs. | 15,868 | 16,469 | 3.8 |
| Hay DM per acre, tons | 2.8 | 2.2 | -21.4 |
| Corn silage per acre, tons | 15.2 | 14.8 | -2.6 |
| Labor Efficiency & Costs | | | |
| Cows per worker | 37 | 38 | 2.7 |
| Milk sold per worker, lbs. | 592,552 | 623,401 | 5.2 |
| Hired labor cost per cwt. | $1.70 | $1.71 | 0.6 |
| Hired labor cost per worker | $25,357 | $25,838 | 1.9 |
| Hired labor cost as % of milk sales | 9.8% | 10.3% | 5.1 |
| Cost Control | | | |
| Grain & concentrate purchased as % of milk sales | 24% | 23% | -4.2 |
| Grain & concentrate per cwt. milk | $4.14 | $3.91 | -5.6 |
| Dairy feed & crop expense per cwt. milk | $5.48 | $5.32 | -2.9 |
| Labor & machinery costs per cow | $1,207 | $1,215 | 0.7 |
| Total farm operating costs per cwt. sold | $14.21 | $14.55 | 2.4 |
| Interest costs per cwt. milk | $0.68 | $0.77 | 13.2 |
| Milk marketing costs per cwt. milk sold | $0.99 | $1.02 | 3.0 |
| Operating cost of producing cwt. of milk | $11.68 | $11.54 | -1.2 |
| Total costs of producing cwt. of milk | $17.73 | $17.30 | -2.4 |
| Capital Efficiency (average for the year) | | | |
| Farm capital per cow | $6,664 | $7,514 | 12.8 |
| Mach. & equipment per cow | $1,145 | $1,317 | 15.0 |
| Asset turnover ratio | 0.51 | 0.48 | -5.9 |
| Income Generation | | | |
| Gross milk sales per cow | $2,756 | $2,747 | -0.3 |
| Gross milk sales per cwt. | $17.37 | $16.68 | -4.0 |
| Net milk sales per cwt. | $16.38 | $15.66 | -4.4 |
| Dairy cattle sales per cow | $208 | $308 | 48.1 |
| Dairy calf sales per cow | $55 | $88 | 60.0 |
| Government receipts per cwt. | $0.41 | $0.47 | 14.6 |
| Profitability | | | |
| Net farm income without appreciation | $64,620 | $61,439 | -4.9 |
| Net farm income with appreciation | $92,318 | $94,609 | 2.5 |
| Labor & mgt. income per operator/manager | $25,038 | $21,934 | -12.4 |
| Labor & mgt. income per oper./manager per cow | $236 | $213 | -9.8 |
| Rate of return on equity capital without apprec. | 3.8% | 3.1% | -18.4 |
| Rate of return on all capital without appreciation | 4.2% | 3.9% | -7.1 |
| Financial Summary | | | |
| Farm net worth, end year | $510,734 | $574,212 | 12.4 |
| Debt to asset ratio | 0.31 | 0.29 | -6.5 |
| Farm debt per cow | $2,172 | $2,336 | 7.6 |

**TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS**
**New York Intensive Grazing Dairy Farms, 1996 to 2005**

| Item | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of farms | 59 | 46 | 59 | 65 | 65 | 54 | 30 | 27 | 30 | 42 |
| Cropping Program | | | | | | | | | | |
| Total tillable acres | 255 | 234 | 247 | 227 | 271 | 288 | 243 | 270 | 267 | 264 |
| Tillable acres rented | 89 | 83 | 90 | 105 | 133 | 142 | 125 | 126 | 96 | 110 |
| Hay crop acres | 130 | 121 | 126 | 120 | 139 | 152 | 119 | 149 | 133 | 143 |
| Corn silage acres | 40 | 49 | 45 | 42 | 44 | 37 | 22 | 28 | 38 | 34 |
| Hay crop, tons DM/acre | 2.5 | 2.1 | 2.4 | 2.1 | 2.7 | 2.2 | 2.2 | 3.7 | 2.9 | 1.9 |
| Corn silage, tons/acre | 13.9 | 14.1 | 14.8 | 13.9 | 12.0 | 15.5 | 12.4 | 15.3 | 15.3 | 14.9 |
| Fertilizer & lime exp./tillable acre | $19 | $20 | $25 | $25 | $20 | $22 | $30 | $21 | $31 | $31 |
| Machinery cost/cow | $432 | $421 | $448 | $545 | $501 | $528 | $439 | $447 | $598 | $586 |
| Dairy Analysis | | | | | | | | | | |
| Number of cows | 78 | 82 | 83 | 79 | 93 | 94 | 94 | 100 | 104 | 95 |
| Number of heifers | 60 | 57 | 62 | 60 | 67 | 70 | 68 | 72 | 74 | 76 |
| Milk sold, cwt. | 13,491 | 14,227 | 14,652 | 14,477 | 15,860 | 15,396 | 15,687 | 15,637 | 17,744 | 15,868 |
| Milk sold/cow, lbs. | 17,270 | 17,277 | 17,653 | 18,346 | 17,107 | 16,295 | 16,618 | 15,684 | 17,144 | 16,783 |
| Purchased dairy feed/cwt. milk | $4.62 | $4.22 | $3.98 | $3.65 | $3.88 | $4.19 | $4.21 | $4.45 | $4.76 | $4.48 |
| Purchased grain & concentrate as % of milk receipts | 30% | 30% | 24% | 23% | 27% | 23% | 28% | 29% | 25% | 26% |
| Purchased feed & crop exp/cwt.milk | $5.48 | $4.97 | $4.81 | $4.39 | $4.56 | $4.94 | $4.99 | $5.06 | $5.55 | $5.34 |
| Operating cost producing milk/cwt. | $11.29 | $11.08 | $10.53 | $10.53 | $10.17 | $11.71 | $9.76 | $9.53 | $11.83 | $11.35 |
| Veterinary & medicine exp./cow | $56 | $55 | $55 | $68 | $66 | $67 | $57 | $59 | $74 | $67 |
| Capital Efficiency | | | | | | | | | | |
| Farm capital/cow | $6,821 | $6,419 | $6,438 | $6,236 | $6,445 | $6,841 | $5,870 | $6,286 | $7,300 | $7,526 |
| Real estate/cow | $3,394 | $3,112 | $3,025 | $2,508 | $2,791 | $2,951 | $2,389 | $2,738 | $3,475 | $3,369 |
| Machinery investment/cow | $1,204 | $1,136 | $1,137 | $1,291 | $1,316 | $1,319 | $1,109 | $1,191 | $1,287 | $1,337 |
| Asset turnover ratio | 0.44 | 0.42 | 0.51 | 0.51 | 0.46 | 0.51 | 0.46 | 0.46 | 0.50 | 0.48 |
| Labor Efficiency | | | | | | | | | | |
| Worker equivalent | 2.70 | 2.79 | 2.75 | 2.63 | 2.76 | 2.78 | 2.59 | 2.71 | 2.90 | 2.70 |
| Operator/manager equivalent | 1.34 | 1.34 | 1.30 | 1.41 | 1.35 | 1.40 | 1.24 | 1.36 | 1.50 | 1.32 |
| Milk sold/worker, lbs. | 499,677 | 509,941 | 532,809 | 550,437 | 574,630 | 553,819 | 605,677 | 577,020 | 611,862 | 587,165 |
| Cows/worker | 29 | 29 | 30 | 30 | 34 | 34 | 36 | 37 | 36 | 35 |
| Labor cost/cow | $646 | $651 | $642 | $715 | $644 | $717 | $683 | $681 | $732 | $746 |
| Hired labor exp./hired worker equiv. | $19,870 | $20,012 | $19,706 | $21,189 | $20,024 | $24,430 | $24,009 | $22,912 | $25,966 | $25,645 |
| Profitability & Financial Analysis | | | | | | | | | | |
| Labor & mgmt. income/operator | $6,551 | $-2,348 | $26,364 | $13,203 | $1,693 | $15,205 | $2,482 | $9,638 | $22,397 | $17,801 |
| Labor &mgmt income/operator/cow | $84 | $-29 | $318 | $167 | $18 | $162 | $26 | $96 | $215 | $187 |
| Net farm income/cow w/o apprec. | $409 | $240 | $703 | $543 | $310 | $555 | $322 | $449 | $652 | $572 |
| Farm net worth, end year | $367,778 | $341,050 | $376,720 | $364,069 | $410,672 | $477,037 | $369,123 | $454,465 | $578,704 | $535,182 |
| Percent equity | 68% | 64% | 68% | 73% | 67% | 71% | 66% | 69% | 73% | 72% |

## INTENSIVE GRAZING SURVEY SUMMARY

From the survey data of the 34 selected grazing farms in New York, 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 the best way to compare diverse businesses that may 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 sets of the top half and the bottom half scaled by the highest to lowest labor and management income per operator per cow.

**SELECTED PRODUCTION AND PROFITABILITY MEASURES**
Intensive Grazing Dairy Farms, 2005

| | Average 34 Farms | 17 Above Average Farms | 17 Below Average Farms |
|---|---|---|---|
| Labor and management income per cow | $253 | $475 | $18 |
| Average number of cows | 97 | 104 | 90 |
| Milk sold per cow, pounds | 17,946 | 18,579 | 17,274 |
| Operating cost of producing milk per cwt. | $11.00 | $10.07 | $11.99 |
| Total cost of producing milk per cwt. | $18.28 | $16.61 | $20.05 |

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, 2005

| | Number of Farms Responding | Average of All Farms Answering Question | Above Average Farms | Below Average Farms |
|---|---|---|---|---|
| Experience | | | | |
| Average years of farming experience | 34 | 23.9 | 21.6 | 26.2 |
| Average years of grazing experience | 34 | 10.7 | 12.2 | 9.3 |
| Farm Characteristics | | | | |
| Percent of farms with seasonal or semi-seasonal calving | 34 | 24% | 29% | 18% |
| Percent of farms with a parlor milking system | 30 | 37% | 33% | 40% |
| Pasture in the Ration | | | | |
| Average percent forage from pasture | 33 | 61% | 56% (17) | 66% (16) |
| Average length (days) of grazing season | 34 | 190 | 193 | 187 |
| Average pounds of grain fed while grazing | 26 | 16.0 | 15.6 | 16.4 |
| Average pounds of grain fed in winter | 26 | 19.0 | 19.3 | 18.7 |
| Average pounds of forage dry matter fed while grazing | 26 | 10.8 | 12.4 | 9.1 |
| Average pounds of forage dry matter from grazing | 26 | 18.2 | 15.6 | 20.8 |
| Average pounds of forage dry matter fed in winter | 26 | 29.0 | 28.0 | 29.9 |
| Pasture Management | | | | |
| Percent rotated after each milking | 34 | 39% | 41% | 29% |
| Percent rotated daily | 34 | 42% | 29% | 47% |
| Percent rotated every other day | 34 | 16% | 24% | 6% |
| Percent other rotation | 34 | 13% | 6% | 18% |
| Percent applied commerical fertilizer to pasture | 34 | 50% | 56% | 44% |
| Percent applied manure to pasture | 34 | 53% | 50% | 56% |
| Percent applied lime to pasture | 34 | 19% | 19% | 19% |
| Percent that clipped pasture | 34 | 85% | 88% | 82% |
| Percent with a weed problem | 34 | 56% | 47% | 65% |
| Percent with water in every paddock | 34 | 56% | 71% | 41% |
| Percent with pasture re-seeded in past 10 years | 34 | 41% | 59% | 24% |
| Percent that mechanically harvested pastures | 34 | 56% | 53% | 59% |
| Most common pasture species | | | | |
| First | | Orchardgrass | Orchardgrass | Orchardgrass |
| Second | | Ladino Clover | Native Clover | Ladino Clover |
| Third | | Native Clover | Ryegrass | Native Clover |

Practices to increase pasture quality tended to indicate higher profitability. Those practices included having more gazing experience, greater supplementation of pasture, rotating pastures more often, use of fertilizer, clipping weeds, re-seeding pasture, and mechanically harvesting pasture before it becomes overgrown. Having water available in every pasture also tended to indicate higher profitability.

## Breeds

Holstein was the most common breed with 72.6 percent of the animals being pure Holstein, the second most common was crossbreeds with 22.4%, and the third most common breed was Jersey with 4.9 percent of the animals. Nineteen of the 34 farms were 95+ percent Holstein and they tended to have higher milk production but lower profitability both per cow and per hundredweight.

**FARMS SCALED BY BREED OF HERD**
Intensive Grazing Farms, 2005

| | Number | Milk Production | Labor & Mgmt. Income per Operator Per Cow | Labor & Mgmt. Income per Operator Per Cwt. | Cull Rate (Sold for Beef or Died) |
|---|---|---|---|---|---|
| Farms that are 95+% Holstein | 19 | 19,506 | $178 | $0.71 | 27.3% |
| Farms that are less than 95% Holstein | 15 | 15,879 | $260 | $1.75 | 25.9% |

## Supplemental Feeding

Twenty-six farms gave detailed ration data and the table below compares the 16 farms that fed corn silage to the 10 that did not. Farms that incorporated corn silage into their grazing forages also tended to feed more grain and have higher milk production. These farms also tended to 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, 2005

| | 13 Above Average Farms | | 13 Below Average Farms | |
|---|---|---|---|---|
| | Corn Silage (8) | No Corn Silage (5) | Corn Silage (8) | No Corn Silage (5) |
| Labor & management income per oper. per cow | $577 | $470 | $194 | $ -313 |
| Milk sold per cow, pounds | 19,005 | 17,603 | 18,906 | 15,813 |
| Grain fed in summer, pounds dry matter | 16.1 | 14.8 | 17.7 | 14.3 |
| Corn silage fed in summer, pounds dry matter | 9.5 | - | 7.0 | - |
| Other forage fed in summer, pounds dry matter | 4.8 | 9.5 | 5.8 | 3.3 |
| Percent forage from pasture | 51% | 65% | 55% | 85% |

## Grazing Season Ration Details

The 13 above average grazing farms fed an average of 15.6 pounds dry matter of grain during the grazing season. Eight farms fed corn silage at an average of 9.5 pounds dry matter. Four fed haylage at an average of 9.4 pounds dry matter. Four farms fed baleage at an average of 5.5 pounds dry matter and six farms fed dry hay at an average of 5.3 pounds dry matter. The group had an average total daily dry matter intake of 47.3 pounds.

The 13 below average grazing farms fed an average of 16.4 pounds dry matter of grain during the grazing season. Eight of the farms fed corn silage at an average of 7.0 pounds dry matter. Five fed haylage at an average of 2.8 pounds dry matter. Three farms fed baleage at an average of 9.6 pounds dry matter and three farms fed dry hay at an average of 4.3 pounds dry matter. The group had an average total daily dry matter intake of 48.9 pounds.

**Frequency of Rotation**

Twelve of the farms rotated their pastures for milk cows after each milking, 13 of the farms rotated pasture every day, 5 farms rotated pasture every other day, and 2 farms rotated based on field conditions. The table below compares the rotation frequency to milk production and labor and management income per operator per cow.

**ROTATION FREQUENCY**
Intensive Grazing Farms, 2005

| | 17 Above Average Farms | | 17 Below Average Farms | |
|---|---|---|---|---|
| | Rotate After Each Milking (7) | Other Rotation Schedule (10) | Rotate After Each Milking (5) | Other Rotation Schedule (12) |
| Milk sold per cow, pounds | 19,076 | 18,231 | 16,315 | 17,614 |
| Labor and management income per operator per cow | $479 | $473 | $-25 | $-56 |

**Water Source**

Seventeen farms provided the majority of water from a well while the remaining seventeen provided water from a natural source (pond 8, spring 6, and stream 3).

**WATER SOURCE**
Intensive Grazing Farms, 2005

| | 17 Above Average Farms | | 17 Below Average Farms | |
|---|---|---|---|---|
| | Well (10) | Other (7) | Well (7) | Other (10) |
| Milk sold per cow, pounds | 17,508 | 20,109 | 17,117 | 17,313 |
| Labor and management income per operator per cow | $425 | $548 | $-85 | $-21 |

**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 11 parlor systems (10 pit parlors, 1 flat parlor) and the remaining 19 farms used pipeline systems.

**MILKING SYSTEM**
Intensive Grazing Farms, 2005

| | 15 Above Average Farms | | 15 Below Average Farms | |
|---|---|---|---|---|
| | Pipeline (10) | Parlor (5) | Pipeline (9) | Parlor (6) |
| Milk sold per cow, pounds | 20,315 | 15,768 | 17,592 | 16,831 |
| Labor and management income per operator per cow | $533 | $374 | $-135 | $104 |
| Average number of cows | 52 | 192 | 56 | 146 |

**Commercial Fertilizer**

Fifteen farms applied fertilizer to the paddocks during the growing season. The majority of farms applied urea and others applied a blended fertilizer. Most applied all the fertilizer in one application in the spring to early June while others applied fertilizer at multiple times throughout the season. 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, 2005

| | 17 Above Average Farms | | 17 Below Average Farms | |
|---|---|---|---|---|
| | Applied Fertilizer (9) | Did Not Apply Fertilizer (8) | Applied Fertilizer (6) | Did Not Apply Fertilizer (10) |
| Milk sold per cow, pounds | 19,886 | 17,109 | 18,125 | 16,904 |
| Labor and management income per operator per cow | $531 | $413 | $131 | $-172 |
| Stocking rate, cows per acre | 1.08 | 1.15 | 1.05 | 1.00 |
| Percent forage from pasture | 54% | 57% | 60% | 70% |
| Most common product applied | Urea | | Urea | |

## 2005 Drought Response

2005 was a drought year for the majority of grazing farms in the summary and 31 farms noted their response to drought conditions. Most responded by supplementing pasture, some added extra pasture acres, and a few took their herd off pasture for a period of time, equivalent to 39.8 days.

**DROUGHT RESPONSE**
Intensive Grazing Farms, 2005

| | Labor and Management Income Per Operator Per Cow | | Percent "Yes" Responses | Average Days Removed From Pasture |
|---|---|---|---|---|
| | Yes | No | | |
| Added extra acres of pasture? | $106 | $335 | 52% | |
| Fed supplemental feed? | $238 | $ -94 | 90% | |
| Were cattle removed from pasture? | $157 | $231 | 19% | |
| If "yes", for how long (cattle days) | | | | 39.8 |

## Intensive Grazing Satisfaction Comments

On a scale of 1 to 5, with 5 being the highest, 32 farms responded with the average rating of grazing satisfaction as 4.5 with 19 farms responding 5, 101 responding 4, and 3 responding 3. When asked whether their lifestyle has improved with the adoption of rotational grazing, 28 farms responded with 23 saying "yes" and 5 saying "no".

## Grazing Trends

The table below compares key figures from 1996 (the first year of the intensive grazing summary), 2005, and a ten-year average (not the same farms all ten years). Cow numbers have increased but milk sold per cow has remained basically the same. [3] Operating cost of producing milk in 2005 averaged $0.57 above the ten-year average but only $0.06 above 1996. Net farm income per cow without appreciation was $96 higher than the ten-year average. Due to the high milk price in 2005, the grain cost as a percent of milk receipts decreased but on a per hundredweight basis was similar to the ten-year average.

**2005 GRAZING INFORMATION COMPARED TO 1996 AND 1996 – 2005 AVERAGE**
Intensive Grazing Farms, 1996 – 2005

| | 59 Grazing Dairy Farms, 1996 Average | 42 Grazing Dairy Farms, 2005 Average | 48 Grazing Dairy Farms, 1996 – 2005 Average |
|---|---|---|---|
| Number of cows | 78 | 95 | 90 |
| Milk sold per cow, pounds[3] | 17,270 | 16,783 | 17,018 |
| Operating cost of producing milk per cwt. | $11.29 | $11.35 | $10.78 |
| Net farm income per cow without apprec. | $409 | $572 | $476 |
| Grain and concentrate as % of milk receipts | 30% | 26% | 27% |
| Grain and concentrate expense per cwt. milk | $4.41 | $3.99 | $3.87 |
| Price of milk per cwt. | $14.78 | $16.41 | $14.91 |

**[3] In 1996, similar size non-grazers sold 17,547 pounds of milk per cow and in 2005 similar size non-grazers sold 21,418 pounds per cow.**

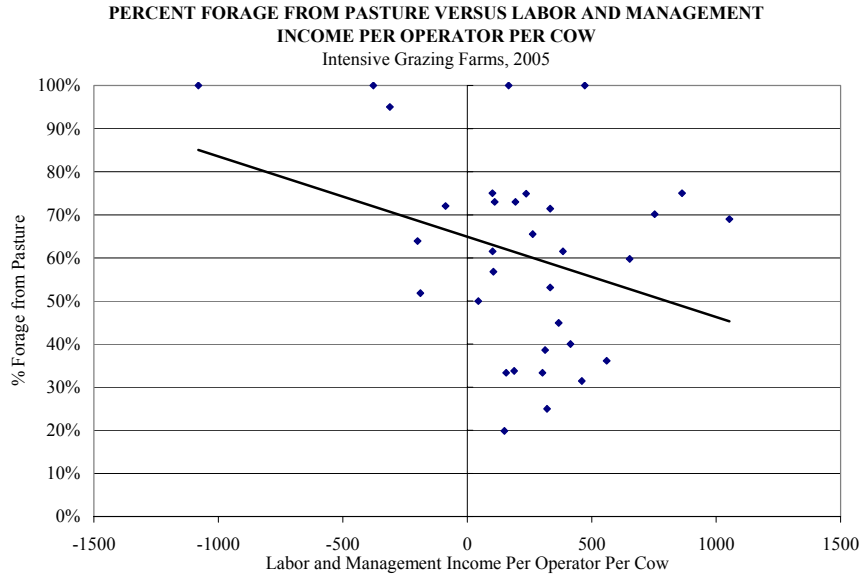
## Open Ended Comments

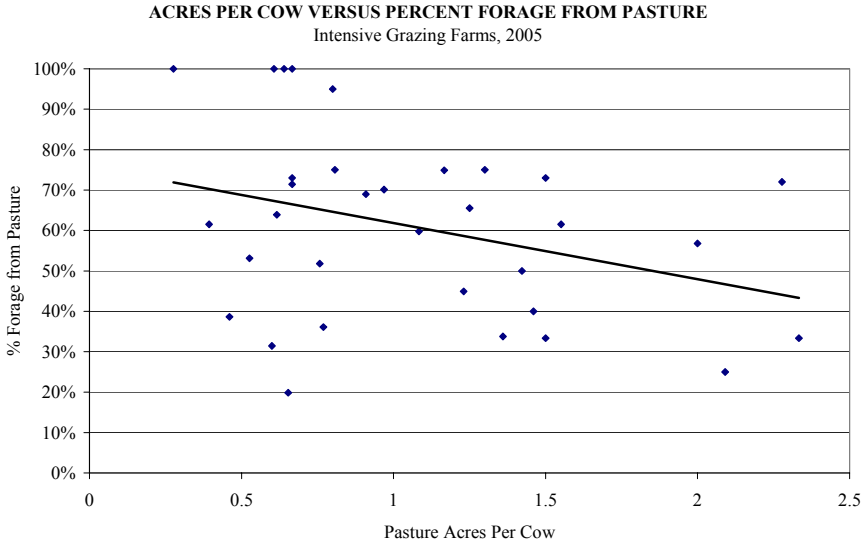
When given the opportunity to state anything about the gazing season this year or in general, several farms responded with these comments:

- Dry weather caused more barn feeding
- Long walk to pastures
- Always pastured, can't compare
- This was the first year on the farm and the land is in poor shape
- Improving lanes and water system would increase satisfaction
- Would not farm if I had to confine all year
- Cows kept in for a couple weeks and were dissatisfied
- Herd health is excellent
- I love it

## Percent Forage from Pasture

The following graphs compare the percent forage from pasture to labor and management income per operator per cow and pasture acres per cow. The grazing farms with 60 to 80 percent of their forage from pasture had the highest profitability.



**INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS**
**New York State Dairy Farms, 2005**

| Item | All Intensive Grazing Farms[4] | Non-Grazing Farms[5] | Average Top 30% Grazing Farms[6] | Profitable Non-Grazing Farms[7] |
|---|---|---|---|---|
| Number of farms | 42 | 69 | 13 | 25 |
| **Business Size & Production** | | | | |
| Number of cows | 95 | 94 | 115 | 113 |
| Number of heifers | 76 | 78 | 94 | 97 |
| Milk sold, lbs. | 1,586,813 | 1,863,199 | 1,852,540 | 2,410,000 |
| Milk sold/cow, lbs. | 16,783 | 19,769 | 16,174 | 21,418 |
| Milk plant test, % butterfat | 3.81% | 3.66% | 3.84% | 3.56% |
| Cull rate | 25.3% | 29.0% | 22.8% | 31.3% |
| Tillable acres, total | 264 | 280 | 297 | 348 |
| Hay crop, tons DM/acre | 1.9 | 2.5 | 2.0 | 2.6 |
| Corn silage, tons/acre | 14.9 | 17.4 | 16.6 | 20.8 |
| Forage DM/cow, tons | 5.0 | 8.9 | 4.0 | 9.3 |
| **Labor & Capital Efficiency** | | | | |
| Worker equivalent | 2.70 | 3.03 | 2.61 | 3.33 |
| Milk sold/worker, lbs. | 587,165 | 615,086 | 709,106 | 724,449 |
| Cows/worker | 35 | 31 | 44 | 34 |
| Farm capital/worker | $263,554 | $304,930 | $296,577 | $290,491 |
| Farm capital/cow | $7,526 | $9,803 | $6,758 | $8,597 |
| Farm capital/cwt. milk | $45 | $49 | $42 | $40 |
| Machinery & equipment per cow | $1,337 | $1,819 | $1,113 | $2,062 |
| **Milk Production Costs & Returns** | | | | |
| Selected costs/cwt.: | | | | |
| Hired labor | $1.82 | $1.60 | $1.60 | $1.57 |
| Grain & concentrate | $3.99 | $4.31 | $3.87 | $3.82 |
| Purchased roughage | $0.49 | $0.27 | $0.55 | $0.20 |
| Replacements purchased | $0.15 | $0.09 | $0.01 | $0.04 |
| Vet & medicine | $0.40 | $0.57 | $0.37 | $0.56 |
| Milk marketing | $0.94 | $0.96 | $0.81 | $0.74 |
| Other dairy expenses | $1.13 | $1.37 | $0.86 | $1.17 |
| Operating cost of producing milk/cwt. | $11.35 | $11.99 | $10.24 | $10.06 |
| Total labor cost/cwt. | $4.44 | $4.32 | $3.72 | $3.65 |
| Operator resources/cwt. | $4.13 | $3.92 | $3.27 | $3.40 |
| Total cost of producing milk/cwt. | $17.45 | $17.67 | $15.27 | $15.04 |
| Average farm price/cwt. | $16.41 | $16.08 | $16.23 | $15.76 |
| **Related Cost Factors** | | | | |
| Hired labor/cow | $306 | $317 | $259 | $337 |
| Total labor/cow | $746 | $854 | $601 | $782 |
| Purchased dairy feed/cow | $752 | $905 | $715 | $861 |
| Purchased grain & conc. as % of milk receipts | 26% | 27% | 25% | 24% |
| Vet & medicine/cow | $67 | $113 | $61 | $121 |
| Machinery costs/cow | $586 | $671 | $438 | $736 |
| Feed & crop exp./cwt. | $5.34 | $5.51 | $5.53 | $4.92 |
| **Profitability Analysis** | | | | |
| Net farm income (with appreciation) | $80,766 | $79,634 | $119,660 | $147,430 |
| Net farm income (without appreciation) | $54,103 | $51,209 | $83,594 | $105,188 |
| Net farm income per cow (w/o appreciation) | $572 | $543 | $730 | $935 |
| Net farm income per cwt. (w/o appreciation) | $3.41 | $2.75 | $4.51 | $4.36 |
| Labor & management income/operator | $17,801 | $5,967 | $46,429 | $43,197 |
| Labor & mgmt. income/operator/cow | $187 | $63 | $404 | $384 |
| Rates of return on: Equity capital with apprec. | 7.0% | 4.8% | 15.8% | 13.2% |
| All capital with appreciation | 6.6% | 5.0% | 12.1% | 11.4% |

[4]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.
[5]Farms with similar herd size as the 42 intensive grazing farms.
[6]Top 30 percent of grazing farms by Labor and Management Incomes Per Operator Per Cow.
[7]Farms with similar herd size as the "Top 30%" grazing farms and Labor and Management Incomes Per Operator greater than $23,000.

## CASE STUDIES

### Windy-Dale Farm

*History*

Dick and Ellie Bossard have operated Windy-Dale Farm since 1975. Prior to that Dick farmed with his father on a different farm. Dick was the first farmer in Steuben County to switch from confinement to rotational grazing, making the switch in 1985. Before that, cows were housed in the barn and fed stored feed. He was fully mechanized with a full line of equipment and silos, including a silo for high moisture shelled corn (HMSC). He was growing all the forages and most of the high moisture corn that was fed. The 35 registered Holsteins were producing at the level of 19,000-20,000 pounds per year but he was not happy. Time to get away was difficult to come by as he needed to be home to care for the cows and his production costs were high. In the early 80's he made the decision to stop growing HMSC, deciding it was cheaper to purchase rather than grow it.

*Grazing Program*

In 1985 he converted a hay field near the barn to paddocks and started grazing. Since then he has not looked back, adding fencing for more paddocks and installing laneways. Corn for silage was discontinued in 1985. Since then clovers and orchard grass are the primary species grown. Fescue was planted in some fields but the cows do not like it.

Cows receive a new paddock at least each day and sometimes after each milking. Breeding age heifers graze with the cows during the summer. Pastures are clipped each June. Water in the paddocks has been an issue. Cows initially had shallow ponds to drink from or came back to the barn for water.

*Breeding Program*

He believes Jerseys are better grazers and was encouraged by his son-in-law, Scott Ward, who is a dairy nutritionist, to consider switching to Jersey Holstein crosses and ultimately Jerseys. So in 1999 the Holstein springing heifers were sold, Jersey springing heifers were purchased and the Holsteins were bred to Jerseys. This was in response to milk being priced on its component value. The switch was made easier because cows were no longer being registered and DHIA had been dropped.

The last four years he has used home raised Jersey bulls as sires. The cross-breeds are now being sold. His goal is to have a 100% Jersey herd and to keep increasing the pounds of components sold. Cows receive 1 ½ to 2 pounds of dry hay while on pasture. He believes this helps keeps components higher.

*Improvements*

He is constantly looking for ways to improve the farm's profitability. In 2002 he received a grant from the Finger Lakes RC&D Council to improve and extend the laneway and install a solar watering system. The laneway has geotextile cloth installed over a 6-8 inch base. This is topped with a layer of fines from a local gravel pit. Somatic cell count has been reduced, cows are now cleaner, and they are able to reach the further paddocks without walking though mud.

The solar watering system consists of a solar panel, well, pump, 1100 gallon storage tank and water lines. Water tubs are filled by gravity from the tank. This has enabled the Bossards to provide water to 60 acres of pasture. On hot days the cows spend more time grazing rather than back at the barn and milk production from those paddocks has increased.

Four years ago, to improve hay quality, he added baleage to his feeding program. These are fed in bale rings in a protected wooded area, starting in the fall as pasture decreases. In his barn the cows face head-to-head. Round bales are cut into halves with a chain saw and then unrolled down the manger. Dick also harvests 3000 small square bales a year that are fed in the barn

The next things on his agenda are a barnyard project, install a diversion ditch, and possibly become a seasonal herd. He has no intention of becoming organic. The Bossards are happy with the more relaxed life style that grazing provides. His focus is on less labor and lower inputs.

*Thanks*

Dick Bossard credits Carl Albers, the local Field Crops Agent, with convincing him to start grazing, going against the conventional stored feed program of that time. However, Dick states the best decision he ever made was to marry Ellie. She has been a strong supporter throughout the years, doing the record keeping, caring for the family, and helping if needed. When they

purchased the farm Dick and Ellie dedicated it to God. They believe they are simply managing what he gave them and want to be good stewards of it.

**Laughing Stock Farm, Roger & Tina Shaner and Family**

*History*

The farm was started by Roger's dad, Wendell, in the early 1970's as a traditional mid-west farm focusing on row crops and hogs. Roger came back to the farm located in Stronghurst, Illinois, after school in 1983 and the farm grew to 1800 acres of row crops, largely on rented land, and 200 hogs in a farrow-to-finish operation. In 1995, a tornado hit the farm, and with that event, the farm started to change direction. The immediate impact of the tornado was a downsizing of the farm to 1000 acres and 100 sows. However, the combination of the lowering of hog prices and the increasing difficulty to find and keep rented land, Roger, and his wife Tina, started to look at things that would utilize less acres but still allow them to meet their goals. With limited experience of grazing 30 beef cows, they decided that milking cows within a grazing system was the best option to pursue.

In 1997, they started in the dairy business; milking 40 crossbred heifers and grazing part of the home farm, while still growing row crops on 500 acres. With the start of the grazing dairy, they had the opportunity to travel and meet with other grazing dairies. From these contacts, they became involved in a grazing group and also became involved in the Cornell Dairy Farm Business Summary, starting in 2000. After analyzing their reports, and talking with other dairies in the group, they confirmed what they had felt the last few years: that the dairy, while small, was making a profit and was actually supporting their row-crop operation. With this confirmation, they decided to start focusing more on the dairy and less on row-crop production. Starting the following year, they made these changes:

- Stopped all row-crop operations
- Stopped hay production
- Purchased 30 more crossbred heifers
- Made a small expansion to the milking parlor
- Tina took over raising replacements from Roger
- Gave up rented land not suitable for grazing

With all these changes, resources were concentrated in the dairy herd, with growth continuing to occur. In 2003, they also moved to a supplemental feeding system, improving both milk production and reproduction efficiency. In 2005, they purchased a second farm and began converting that land from row crop to pasture.

*Current Operation*

With the 2006 grazing season underway, the farm is currently milking 180 cows, comprised of 25 percent Jerseys and the rest a combination of Jersey, Aryshire, and New Zealand Friesian genetics. For 2005, they averaged 153 cows for the year. The herd is seasonal, with calving beginning the last week of February and cows dried off by December 31. The cows are milked twice a day in a DairyMaster double 20-swing parlor installed in an old hog building. There is no housing for any animals, but a second old shed is used for calving through March of each year. Windbreaks and hills provide wind protection for the animals.

Roger is involved with all aspects of the farm on a full-time basis. Tina takes care of the calves during the calving season until weaning. Roger's dad feeds, and four part-time employees are involved in milking the cows. Milking occurs twice a day, taking about 2½ hours from set up to wash down. For 2005, they averaged 65 cows per worker and 979,614 pounds of milk sold per worker, with production of 15,174 pounds per cow.

Currently, the farm consists of 240 acres of pasture; 180 acres is in rye grass, with the remainder in alfalfa/orchard grass. As mud and overwintering dictates, pasture is reseeded with rye grasses. Animals are rotated to a fresh paddock after each milking and are never further than 400 feet from the nearest portable water trough, fed through a system of buried water lines supplied by well water. One half of the farm has improved laneways consisting of road cloth and road millings. Rented land and the new farm are dirt laneways. As cash flow permits, laneways will be improved on the new farm. Border fence is comprised of some woven wire, three-strand, and one-strand high tensile, with the movement toward three-strand. Internal fences are one-strand high tensile, and polywire is used as breakwires for the paddocks. Paddocks are laid out so that from pole to pole represents one-acre segments.

To maximize pasture growth, pastures are fertilized in May, June and August with a total of 150 pounds of nitrogen, primarily from urea and ammonia sulfate. Calcium and other micronutrients are also applied. Pastures are clipped once a year, usually in June. For 2005, fertilizer costs were $58 per cow.

Animals are supplemented two ways. Cows are first fed 10 pounds of corn/soy/distillers in the milking parlor. Once they have exited the milking parlor, they have one hour of access to a total-mixed ration comprised of corn silage, cotton seed, wet gluten meal, and dry distillers, along with free choice hay. This is fed in fence line feeders. For winter feeding, purchased corn silage and large square bales of hay are utilized, fed in bale rings and feed bunks that are moved as needed. The corn silage is stored in ag bags. Large square bales of hay are either purchased, or have been custom harvested off the pasture if enough excess growth. For 2005, purchased grain and concentrates per cow were $3.61 per hundredweight and purchased forages were $2.83 per hundredweight

For the breeding program, all bulls are utilized, with the goal of a nine-week window. The bulls are purchased from other grazing farms and are AI sired from dams that have bred back at least four seasons. About 15 percent of the animals in 2005 were not bred in the window. The current herd didn't follow any planned crossbreeding program, but the program now in place is Jersey bred to New Zealand Friesian, bred to Ayrshire, bred back to Jersey.

The replacements are all bred to bulls, with the bulls coming from other grazing herds and from Jersey, New Zealand, and Ayrshire genetics; 8-10 bulls are used with the replacements and they are used only for one season.

When calves are born, they receive at least two feedings of colostrum by bottle. They are then moved to small pens of nine calves each, where they receive 1.5 gallons of milk per day in a bar-mob feeder. They also have free choice water and calf starter. They are on milk for at least 8 weeks, and are eating a minimum of three pounds of calf starter before they are weaned. When they are weaned, they are grouped into pens of 60 and are trained to electric fences. They are then turned out to pasture, while still receiving supplemental grain. In December, at a weight of 450-500 pounds, they are switched to a diet comprised of corn silage and dry hay for the winter, and then back to pasture. Calving age is targeted at 24 months of age.

*Future Plans*

Roger and Tina are very excited about the grazing dairy business, and are continuing to move forward with their business. Participating in the Dairy Farm Business Summary, they have been able to track their profitability and the progress the farm has made as they have made changes to the business. For 2003-2005, they have averaged over $600 net farm income without appreciation per cow. Over the next couple years they are going to be looking into growing more of their own winter forages and also potentially buying equipment instead of relying on custom service providers. Over the longer term as the herd grows to 300 cows, they plan on developing other pasture to move the heifers off the home farm along with developing a second grazing dairy. They are also looking forward to additional family members coming back to the business.

**Jerry-Dell Farm**

Vaughn and Sue Sherman operate Jerry-Dell Farm in Dryden, NY along with son, Ryan, and nephew, Troy Sherman.

The farm was a grazing herd in the 1950's and they moved away from that in the 1970's to follow the trend of getting more and more out of their cows. By the 1990's the farm was a total confinement freestall operation utilizing high grain rations, high corn silage, 3 times-per-day milking, and bST. They were able to obtain a 90+ pound per day herd average but it was at the expense of a healthy herd. The health of calves born was even worse.

They were killing the cows and spending a lot of money to do it. In 1997 the Shermans looked at grazing. Having no cash flow played well into transitioning to a low input grazing system and, much to their surprise, even though the milk check decreased, cash flow improved.

*Benefit Since the Grazing Transition*

The main benefit grazing has brought to the farm is an increase in overall cow health. This is evidenced in the way that the cow walk, cow structure, udder health, somatic cell count (SCC), and more. Cows get sick less and when they do get sick, they heal quicker.

An example of this is the farms somatic cell count. In the 1990's the SCC was a problem so they introduced 3X milking along with other strategies that never improved the problem. Since transitioning to grazing, the farm has gone back to 2X and has averaged a SCC below 200,000. Another example is when the farm misses a cow's pregnancy due date and the animal freshens without a dry period. Before, this would be such a shock that the cow would be culled but today the animal will keep milking like nothing happened.

*Organic Transition*

After two years of grazing, they were drawn to the organic market and in 2000 they began selling organic milk.

They were initially attracted to the organic market by the price but the primary reason they still farm organically is because they are hooked on the philosophy. Many are timid at the notion of organic because of the fear, *what will I do if the cows get sick?* The organic philosophy is that if you manage the farm for healthy cows, they will not get sick and then you won't need all that medicine. The same is true for crops. Most could not imagine growing corn without nitrogen fertilizers and pesticides, but it can be done. More importantly, after years of not using fertilizers and pesticides, the fields' soil biology will change, organic matter increases improving overall soil health. Management substitutes for fossil fuel based inputs when growing organic crops.

*Pasture System*

The cows typically average 60-70 percent forage from pasture throughout the grazing season because of high quality pasture. While important to all farms, the rewards of high quality pasture are even greater to organic farms where soy can cost as much as $700 per ton.

With only 218 acres to graze, the 300 milking cows consume almost all of it and thus the high percent of forage from pasture. Heifers and dry cows are custom raised at another farm for the summer. Their keys to effective grazing are water in every field, clipping pastures when needed, and fresh pasture after every milking. By doing this they are able to feed 10 pounds less grain per cow per day during the grazing season with no loss in production.

Another key to their grazing system is the use of a water wagon instead of fixed water areas. The wagon is more labor intensive; however, it avoids the expense and maintenance of running water pipes over 218 acres. Additionally, by regularly moving the water wagon, they do not have torn up and muddy fields around the water troughs where warts could spread.

*Dairy Farm Business Summary*

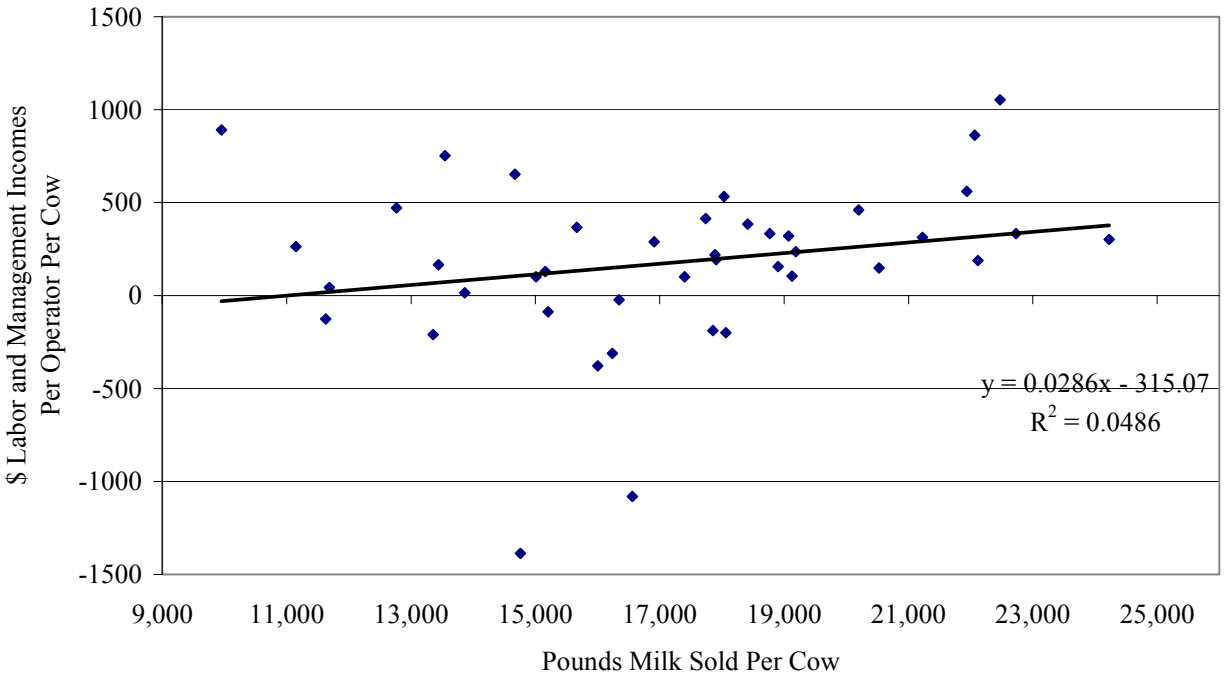
Despite the fact that Cornell does not publish benchmarks for organic farms, the Sherman's continue to do the dairy farm business summary each year. They find some benefit in comparing the farm to conventional farms of similar size but it is mainly done to measure the year-to-year progress of their farm business.

## SUMMARY OF GRAZING FARMS BY HERD SIZE

There were ten 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 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**

42 Intensive Grazing Farms, 2005



**INTENSIVE GRAZING FARMS BY HERD SIZE GROUP**

42 Intensive Grazing Dairy Farms, 2005

| Item | Less Than 50 Cows | 50 to 80 Cows | 80 Cows Or More |
|---|---|---|---|
| Number of farms | 15 | 14 | 13 |
| Business Size & Production | | | |
| Number of cows | 39 | 60 | 196 |
| Number of heifers | 29 | 43 | 167 |
| Milk sold, lbs. | 624,430 | 1,112,824 | 3,207,704 |
| Milk sold/cow, lbs. | 16,177 | 18,525 | 16,347 |
| Milk plant test, % butterfat | 3.83% | 3.82% | 3.85% |
| Cull rate | 22.3% | 27.7% | 25.2% |
| Tillable acres, total | 147 | 169 | 500 |
| Hay crop, tons DM/acre | 1.5 | 1.9 | 2.1 |
| Corn silage, tons/acre | 12.7 | 18.5 | 13.7 |
| Forage DM/cow, tons | 5.3 | 7.2 | 4.4 |
| Labor & Capital Efficiency | | | |
| Worker equivalent | 1.96 | 1.90 | 4.43 |
| Milk sold/worker, lbs. | 318,993 | 586,984 | 724,087 |
| Cows/worker | 20 | 32 | 44 |
| Farm capital/worker | $186,997 | $263,258 | $301,903 |
| Farm capital/cow | $9,495 | $8,327 | $6,816 |
| Farm capital/cwt. milk | $59 | $45 | $42 |
| Milk Production Costs & Returns | | | |
| Selected costs/cwt.: | | | |
| Hired labor | $0.46 | $0.67 | $2.56 |
| Grain & concentrate | 4.46 | 3.91 | 3.92 |
| Purchased roughage | 1.03 | 0.54 | 0.34 |
| Replacements purchased | 0.06 | 0.26 | 0.13 |
| Veterinary & medicine | 0.48 | 0.36 | 0.40 |
| Milk marketing | 1.09 | 0.86 | 0.94 |
| Other dairy expenses | 1.31 | 1.24 | 1.07 |
| Operating cost of producing milk/cwt. | 10.97 | 10.40 | 11.78 |
| Operator resources/cwt. | 7.33 | 5.40 | 2.94 |
| Total labor cost/cwt. | 7.21 | 4.35 | 3.86 |
| Total cost of producing milk/cwt. | 20.93 | 17.49 | 16.65 |
| Average farm price/cwt. | 16.42 | 15.72 | 16.67 |
| Related Cost Factors | | | |
| Hired labor/cow | $75 | $125 | $418 |
| Total labor/cow | 1,166 | 806 | 630 |
| Purchased dairy feed/cow | 889 | 825 | 697 |
| Purchased grain & concentrate as % of milk receipts | 27% | 26% | 24% |
| Veterinary & medicine/cow | $77 | $66 | $65 |
| Machinery costs/cow | $648 | $587 | $572 |
| Feed & crop expense/cwt. | $6.14 | $5.18 | $5.22 |
| Profitability Analysis | | | |
| Net farm income (without appreciation) | $23,351 | $43,570 | $100,928 |
| Net farm income/cow (without appreciation) | $605 | $725 | $514 |
| Net farm income/cwt. (without appreciation) | $3.74 | $3.92 | $3.15 |
| Labor & management income/operator | $2,359 | $16,122 | $37,805 |
| Labor & management income/operator/cow | $60 | $269 | $193 |
| Rates of return on: | | | |
| Equity capital with appreciation | -1.1% | 2.7% | 11.7% |
| All capital with appreciation | 0.2% | 3.4% | 9.9% |

## 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**
42 Intensive Grazing Dairy Farms, 2005

| Type of Farm | Number |
|---|---|
| Dairy | 42 |
| Part-time dairy | 0 |
| Dairy cash-crop | 0 |

| Type of Ownership | Number |
|---|---|
| Owner | 39 |
| Renter | 3 |

| Type of Business | Number |
|---|---|
| Sole Proprietorship | 28 |
| Partnership | 10 |
| Limited Liability Corporation | 4 |
| Subchapter S Corporation | 0 |
| Subchapter C Corporation | 0 |

| Type of Barn | Number |
|---|---|
| Stanchion or Tie-Stall | 24 |
| Freestall | 11 |
| Combination | 7 |

| Milking Frequency | Number |
|---|---|
| 2 times per day | 41 |
| 3 times per day | 0 |
| Other | 1 |

| Breed | Percent |
|---|---|
| Holstein | 71 |
| Jersey | 11 |
| Other | 18 |

| Milking System | Number |
|---|---|
| Bucket & carry | 0 |
| Dumping station | 1 |
| Pipeline | 25 |
| Herringbone-conventional exit | 7 |
| Herringbone-rapid exit | 0 |
| Parallel | 3 |
| Parabone | 2 |
| Rotary | 0 |
| Other | 4 |

| Production Records | Number |
|---|---|
| Testing Service | 32 |
| On-Farm System | 1 |
| Other | 0 |
| None | 9 |

| bST Usage | Number |
|---|---|
| Used consistently | 5 |
| Used inconsistently | 2 |
| Started using in 2005 | 0 |
| Stopped using in 2005 | 0 |
| Not used in 2005 | 35 |
| Average percent usage, if used | 29% |

| Business Record System | Number |
|---|---|
| Account Book | 15 |
| Accounting Service | 5 |
| On-farm computer software | 20 |
| Other | 2 |

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 2005.

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**

42 Intensive Grazing Dairy Farms, 2005

| Expense Item | Cash Paid | - | Change in Inventory or Prepaid Expense | + | Change in Accounts Payable | = | Accrual Expenses |
|---|---|---|---|---|---|---|---|
| Hired Labor | $ 28,903 | | $ 13 | << | $ 25 | | $ 28,915 |
| Feed | | | | | | | |
| Dairy grain & concentrate | 64,776 | | 913 | | -495 | | 63,368 |
| Dairy roughage | 8,354 | | 250 | | -388 | | 7,716 |
| Nondairy | 56 | | 0 | | 0 | | 56 |
| Professional nutritional services | 102 | | 0 | | 0 | | 102 |
| Machinery | | | | | | | |
| Machinery hire, rent & lease | 6,551 | | 0 | << | -118 | | 6,433 |
| Machinery repairs & farm vehicle exp. | 16,475 | | 35 | | -99 | | 16,342 |
| Fuel, oil & grease | 8,929 | | 266 | | -15 | | 8,648 |
| Livestock | | | | | | | |
| Replacement livestock | 2,407 | | 0 | << | 0 | | 2,407 |
| Breeding | 3,248 | | 93 | | 23 | | 3,178 |
| Veterinary & medicine | 6,288 | | 84 | | 131 | | 6,335 |
| Milk marketing | 15,034 | | 0 | << | -62 | | 14,972 |
| Bedding | 1,833 | | 42 | | 0 | | 1,791 |
| Milking supplies | 5,464 | | 40 | | -1 | | 5,423 |
| Cattle lease & rent | 214 | | 0 | << | 0 | | 214 |
| Custom boarding | 2,141 | | 14 | << | 0 | | 2,127 |
| bST expense | 694 | | 3 | | 0 | | 691 |
| Livestock professional fees | 1,385 | | 45 | | 11 | | 1,351 |
| Other livestock expense | 3,287 | | -12 | | 3 | | 3,302 |
| Crops | | | | | | | |
| Fertilizer & lime | 9,046 | | 577 | | 301 | | 8,770 |
| Seeds & plants | 2,666 | | 24 | | 59 | | 2,701 |
| Spray, other crop expense | 1,979 | | -70 | | -14 | | 2,035 |
| Crop professional fees | 161 | | 0 | | 0 | | 161 |
| Real Estate | | | | | | | |
| Land, building & fence repair | 4,565 | | 51 | | 247 | | 4,762 |
| Taxes | 6,989 | | -23 | << | -125 | | 6,887 |
| Rent & lease | 5,528 | | 0 | << | 0 | | 5,528 |
| Other | | | | | | | |
| Insurance | 4,221 | | -16 | << | -35 | | 4,202 |
| Utilities (farm share) | 7,648 | | 0 | << | -15 | | 7,633 |
| Interest paid | 10,722 | | 0 | << | 92 | | 10,814 |
| Other professional fees | 901 | | 0 | | 31 | | 932 |
| Miscellaneous | 1,701 | | 27 | | 94 | | 1,768 |
| Total Operating | $232,271 | | $ 2,356 | | $ -350 | | $ 229,565 |
| Expansion livestock | 3,638 | | 0 | << | 0 | | 3,638 |
| Extraordinary expense | 1,421 | | 0 | | -231 | | 1,190 |
| Machinery depreciation | | | | | | | 17,678 |
| Building depreciation | | | | | | | 7,446 |
| TOTAL ACCRUAL EXPENSES | | | | | | | $ 259,517 |

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 2005 but not paid for. A decrease is subtracted because it represents payment for resources used before 2005.

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**
42 Intensive Grazing Dairy Farms, 2005

| Receipt Item | Cash Receipts | + | Change in Inventory | + | Change in Accounts Receivable | = | Accrual Receipts |
|---|---|---|---|---|---|---|---|
| Milk sales | $ 261,667 | | | | $ -1,212 | | $ 260,455 |
| Dairy cattle | 19,757 | | $ 7,468 | | 229 | | 27,454 |
| Dairy calves | 4,849 | | 2,849 | | 0 | | 7,698 |
| Other livestock | 896 | | 406 | | 0 | | 1,302 |
| Crops | 807 | | -1,077 | | -20 | | -290 |
| Government receipts | 6,769 | | 0 [8] | | 0 | | 6,769 |
| Custom machine work | 181 | | | | 0 | | 181 |
| Gas tax refund | 404 | | | | 0 | | 404 |
| Other | 7,199 | | | | 2,447 | | 9,646 |
| Less nonfarm noncash capital[9] | | (-) | 0 [9] | | | (-) | 0 |
| Total Receipts | $ 302,530 | | $ 9,646 | | $ 1,444 | | $ 313,620 |

[8]Change in advanced government receipts.
[9]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 2005 for the 2006 crop year in excess of funds earned for 2005. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2005 but received in 2004.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January for milk produced in December 2005 compared to January 2005 payments for milk produced in 2004 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[10] 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.

[10]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.

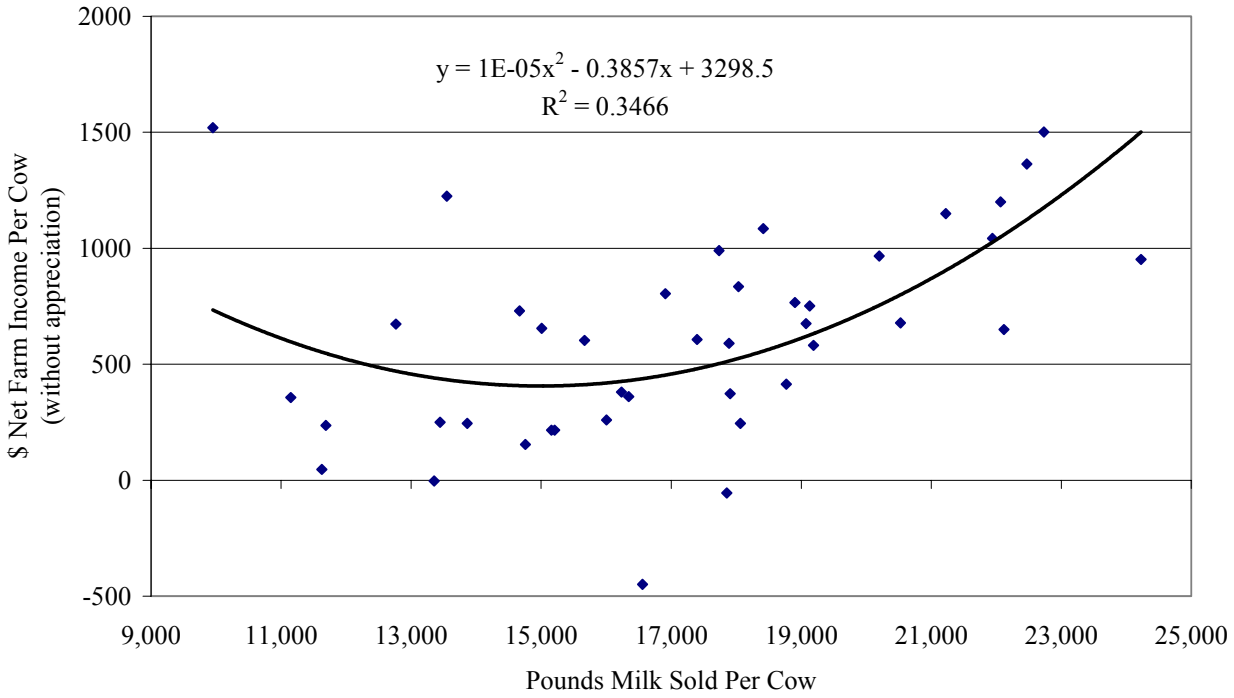
**NET FARM INCOME**
Intensive Grazing Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[11] | Average Top 30% Farms[11] |
|---|---|---|
| Total accrual receipts | $ 313,620 | $ 363,328 |
| Appreciation: Livestock | 11,489 | 26,062 |
| Machinery | 3,015 | 2,097 |
| Real Estate | 11,469 | 7,618 |
| Other Stock & Certificates | 689 | 290 |
| Total Including Appreciation | $ 340,283 | $ 399,395 |
| Total accrual expenses | - 259,517 | - 279,734 |
| Net Farm Income (with appreciation) | $ 80,766 | $ 119,660 |
| Net Farm Income Per Cow (with appreciation) | $ 854 | $ 1,045 |
| Net Farm Income (without appreciation) | $ 54,103 | $ 83,594 |
| Net Farm Income Per Cow (without appreciation) | $ 572 | $ 730 |

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

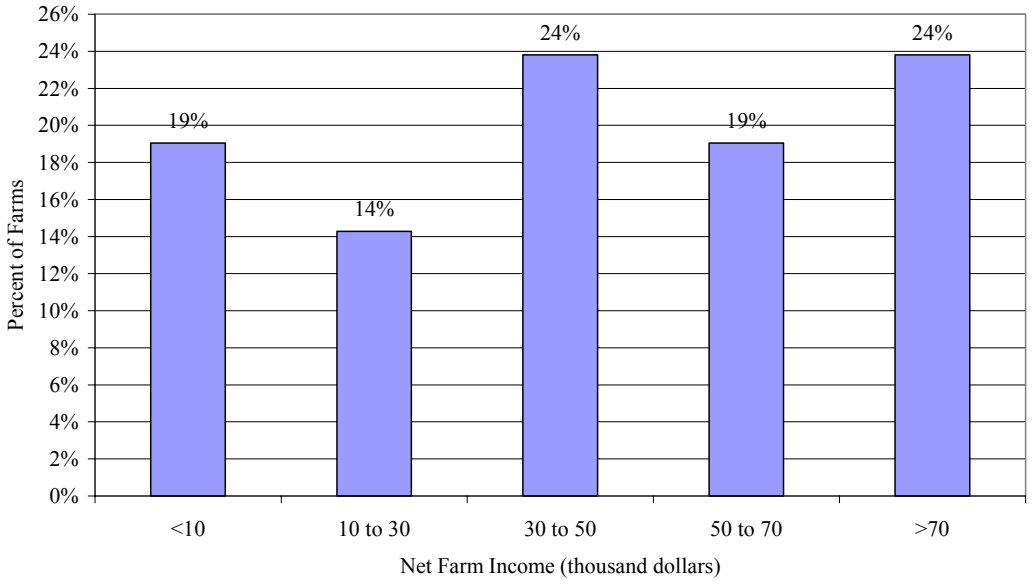
The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher new farm incomes can be achieved across a range of production levels as a result of different management systems, such as grazing, being utilized by the participating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

**NET FARM INCOME PER COW AND MILK PER COW**
42 Intensive Grazing Farms, 2005



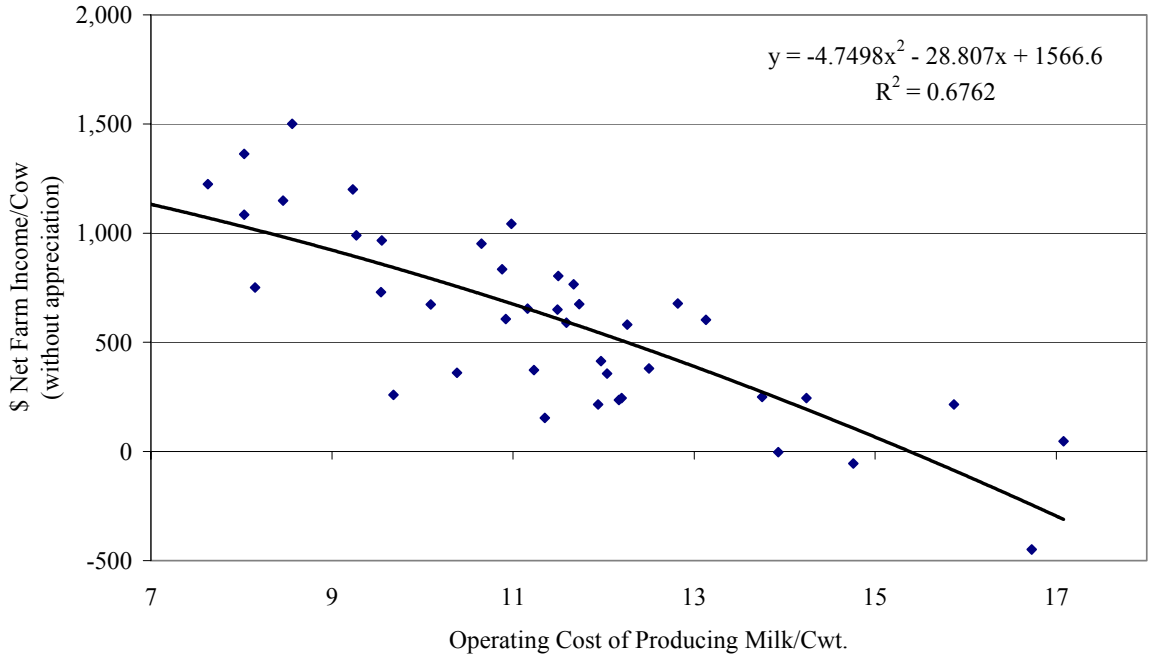
Net farm income without appreciation averaged $54,103 on these 42 farms in 2005. The range in net farm income without appreciation was from less than $-21,000 to more than $360,000. Net farm income was less than $30,000 on 33 percent of the farms, between $30,000 and $70,000 on 43 percent of the farms, while 24 percent showed net farm incomes of $70,000 or more.

**DISTRIBUTION OF NET FARM INCOME WITHOUT APPRECIATION**
42 Intensive Grazing Farms, 2005




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 PRODUCING MILK/CWT.**
42 Intensive Grazing Farms, 2005



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.

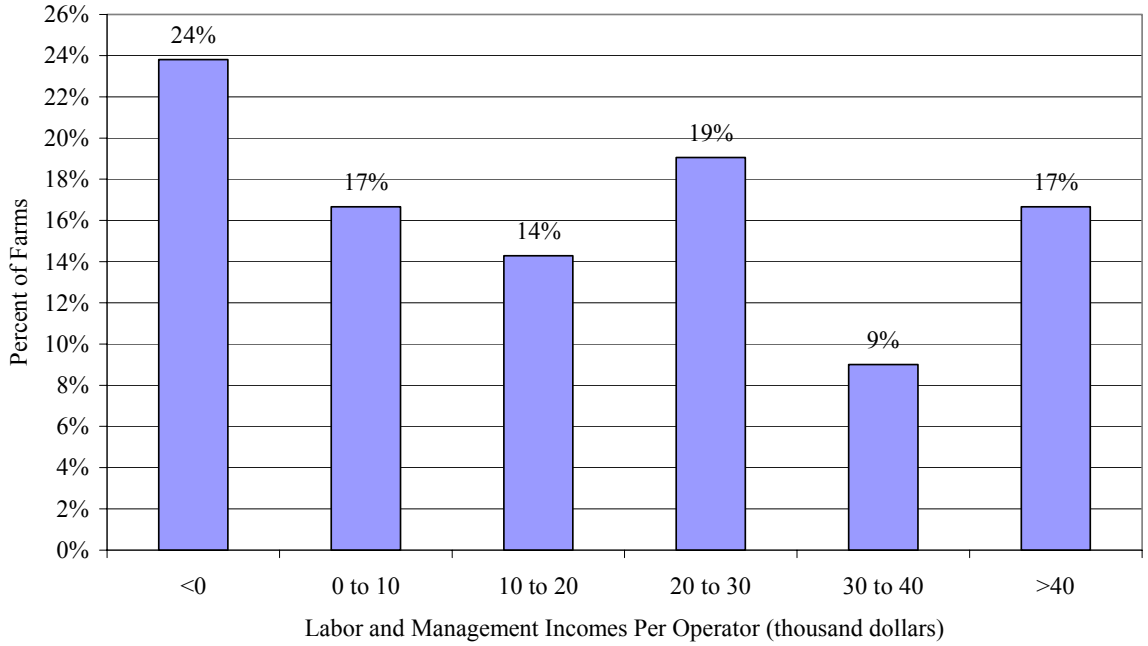
**LABOR AND MANAGEMENT INCOME**
Intensive Grazing Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[12] | Average Top 30% Farms[12] |
|---|---|---|
| Net farm income without appreciation | $ 54,103 | $ 83,594 |
| Family labor unpaid @ $2,200 per month | - 4,955 | - 5,212 |
| Interest on average equity capital @ 5% real rate | - 25,650 | - 24,988 |
| Labor & Management Income per Farm | $ 23,498 | $ 53,393 |
| Labor & Management Income per Operator/Manager | $ 17,801 | $ 46,429 |
| Labor & Management Income per Operator per Cow | $ 187 | $ 404 |

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

Labor and management income per operator averaged $17,801 on these 42 farms in 2005. The range in labor and management income per operator was from less than $-50,000 to more than $257,000. Returns to labor and management were less than $0 on 24 percent of the farms. Labor and management incomes per operator were between $0 and $30,000 on 50 percent of the farms while 26 percent showed labor and management incomes of $30,000 or more per operator.

**DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR**
42 Intensive Grazing Farms, 2005




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 large percentage of farms fall near $0 to $20,000 with a considerable percentage less than zero. One comparison to make to the state distribution is the percentage of farms that were above $20,000 labor and management income per operator. For the intensive grazing farms, 45% of the farms had returns that were over $20,000, while for 215 farms across the state, 52% had returns greater than $20,000 in 2005.

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 Dairy Farms, 2005

| Item | | 42 Grazing Dairy Farms[13] | | Average Top 30% Farms[13] |
|---|---|---|---|---|
| Net farm income with appreciation | $ | 80,766 | $ | 119,660 |
| Family labor unpaid @$2,200 per month | - | 4,955 | - | 5,212 |
| Value of operators' labor & management | - | 39,881 | - | 35,538 |
| Return on equity capital with appreciation | $ | 35,930 | $ | 78,910 |
| Interest paid | + | 10,814 | + | 15,067 |
| Return on total capital with appreciation | $ | 46,744 | $ | 93,977 |
| Return on equity capital without appreciation | $ | 9,267 | $ | 42,843 |
| Return on total capital without appreciation | $ | 20,081 | $ | 57,910 |
| Rate of return on average equity capital: | | | | |
| with appreciation | | 7.0% | | 15.8% |
| without appreciation | | 1.8% | | 8.6% |
| Rate of return on average total capital: | | | | |
| with appreciation | | 6.6% | | 12.1% |
| without appreciation | | 2.8% | | 7.5% |
| Net farm income from operations ratio | | 0.17 | | 0.23 |

[13]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 2005, lease payments were discounted by 7.25 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2005 that are for participation in the 2006 program are the end year balance and payments received in 2004 for participation in the 2005 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.

**2005 FARM BUSINESS & NONFARM BALANCE SHEET**

42 Intensive Grazing Dairy Farms, 2005

| Farm Assets | Jan. 1 | Dec. 31 | Farm Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|---|---|---|---|---|---|
| Current | | | Current | | |
| Farm cash, checking & savings | $ 3,227 | $ 3,125 | Accounts payable | $ 10,933 | $ 10,352 |
| Accounts receivable | 18,159 | 19,603 | Operating debt | 6,148 | 11,599 |
| Prepaid expenses | 228 | 261 | Short Term | 178 | 261 |
| Feed & supplies | 45,744 | 46,990 | Advanced govt. receipts | 0 | 0 |
| | | | Current Portion: | | |
| | | | Intermediate | 10,326 | 12,680 |
| | | | Long Term | 5,025 | 5,652 |
| Total Current | $ 67,358 | $ 69,979 | Total Current | $ 32,610 | $ 40,543 |
| Intermediate | | | Intermediate | | |
| Dairy cows: | | | Structured debt | | |
| owned | $ 113,803 | $ 119,822 | 1-10 years | $ 71,111 | $ 67,694 |
| leased | 404 | 206 | Financial lease | | |
| Heifers | 61,844 | 77,631 | (cattle/machinery) | 1,175 | 2,652 |
| Bulls & other livestock | 2,868 | 3,274 | Farm Credit stock | 2,136 | 1,995 |
| Mach. & equip. owned | 118,527 | 131,146 | Total Intermediate | $ 74,422 | $ 72,341 |
| Mach. & equip. leased | 771 | 2,446 | | | |
| Farm Credit stock | 2,136 | 1,995 | | | |
| Other stock/certificate | 5,389 | 6,447 | | | |
| Total Intermediate | $ 305,741 | $ 342,967 | | | |
| | | | Long Term | | |
| Long Term | | | Structured debt | | |
| Land & buildings: | | | >10 years | $ 83,765 | $ 96,786 |
| owned | $ 305,094 | $ 331,907 | Financial lease | | |
| leased | 0 | 146 | (structures) | 0 | 146 |
| Total Long Term | $ 305,094 | $ 332,053 | Total Long Term | $ 83,765 | $ 96,932 |
| | | | Total Farm Liab. | $190,797 | $ 209,817 |
| Total Farm Assets | $ 678,193 | $ 744,999 | FARM NET WORTH | $ 487,396 | $ 535,182 |

Nonfarm Assets, Liabilities & Net Worth (Average of 20 farms reporting)

| Assets | Jan. 1 | Dec. 31 | Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|---|---|---|---|---|---|
| Personal cash, checking & savings | $ 12,443 | $ 13,383 | Nonfarm Liabilities | $ 381 | $ 2,829 |
| Cash value life insurance | 6,013 | 6,607 | | | |
| Nonfarm real estate | 15,250 | 18,750 | | | |
| Auto (personal share) | 5,450 | 5,500 | | | |
| Stocks & bonds | 23,656 | 37,247 | | | |
| Household furnishings | 10,050 | 10,050 | | | |
| All other nonfarm assets | 9,207 | 9,367 | | | |
| Total Nonfarm Assets | $ 82,070 | $ 100,905 | NONFARM NET WORTH | $ 81,689 | $ 98,076 |

| Farm & Nonfarm Assets, Liabilities, and Net Worth[14] | Jan. 1 | Dec. 31 |
|---|---|---|
| Total Assets | $ 760,263 | $ 845,904 |
| Total Liabilities | 191,178 | 212,646 |
| TOTAL FARM & NONFARM NET WORTH | $ 569,085 | $ 633,258 |

[14]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 Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[15] | Average Top 30% Farms[15] |
|---|---|---|
| Financial Ratios - Farm: | | |
| Percent equity | 72% | 66% |
| Debt/asset ratio: total | 0.28 | 0.34 |
| long-term | 0.29 | 0.41 |
| intermediate/current | 0.27 | 0.30 |
| Leverage Ratio | 0.39 | 0.53 |
| Current Ratio | 1.73 | 1.08 |
| Working Capital: $29,435, As % of Expenses | 11% | ($5,789) 2% |
| Farm Debt Analysis: | | |
| Accounts payable as % of total debt | 5% | 7% |
| Long-term liabilities as a % of total debt | 46% | 50% |
| Current & inter. liabilities as a % of total debt | 54% | 50% |
| Cost of term debt (weighted average) | 6.1% | 5.5% |

| | 42 Grazing Dairy Farms[15] | | Average Top 30% Farms[15] | |
|---|---|---|---|---|
| Farm Debt Levels: | Per Cow | Per Tillable Acre Owned | Per Cow | Per Tillable Acre Owned |
| Total farm debt | $ 2,243 | $ 1,362 | $ 2,449 | $ 1,596 |
| Long-term debt | 1,036 | 629 | 1,215 | 792 |
| Intermediate & long term | 1,809 | 1,099 | 1,844 | 1,201 |
| Intermediate & current debt | 1,207 | 733 | 1,234 | 804 |

[15] 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**
42 Intensive Grazing Dairy Farms, 2005

| Item | Real Estate | Machinery & Equipment |
|---|---|---|
| Value beginning of year | $ 305,094 | $ 118,527 |
| Purchases | $ 32,946[16] | $ 27,541 |
| Gift & inheritance | + 0 | + 392 |
| Lost capital | - 10,156 | |
| Sales | - 0 | - 651 |
| Depreciation | - 7,446 | - 17,678 |
| Net investment | = 15,344 | = 9,604 |
| Appreciation | + 11,469 | + 3,015 |
| Value end of year | $ 331,907 | $ 131,146 |

[16] $11,449 land and $21,497 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 Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[17] | | Average Top 30% Farms[17] | |
|---|---|---|---|---|
| Beginning of year farm net worth | | $ 487,395 | | $ 455,733 |
| Net farm income w/o appreciation | $ 54,103 | | $ 83,594 | |
| +Nonfarm cash income | + 5,170 | | + 4,767 | |
| -Personal withdrawals & family expenditures excluding nonfarm borrowings | - 39,214 | | - 35,357 | |
| RETAINED EARNINGS | | +$ 20,059 | | +$ 53,003 |
| Nonfarm noncash transfers to farm | $ 392 | | $ 0 | |
| +Cash used in business from nonfarm capital | + 10,413 | | + 5,895 | |
| -Note or mortgage from farm real estate sold (nonfarm) | - 0 | | - 0 | |
| CONTRIBUTED/ WITHDRAWN CAPITAL | | +$ 10,805 | | +$ 5,895 |
| Appreciation | $ 26,663 | | $ 36,067 | |
| -Lost capital | - 10,156 | | - 12,351 | |
| CHANGE IN VALUATION EQUITY | | +$ 16,507 | | +$ 23,716 |
| IMBALANCE/ERROR | | - -416 | | - -2,706 |
| End of year net worth[18] | | =$535,182 | | =$541,053 |
| Change in Net Worth | | | | |
| Without appreciation | $ 21,124 | | $ 49,253 | |
| With appreciation | $ 47,787 | | $ 85,320 | |

[17]See page 1 for a description of these groups of farms.
[18]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**
42 Intensive Grazing Dairy Farms, 2005

| Item | | | Average | |
|---|---|---|---|---|
| Cash Flow from Operating Activities | | | | |
| Cash farm receipts | $ 302,530 | | | |
| - Cash farm expenses | 232,271 | | | |
| - Extraordinary expense | 1,421 | | | |
| = Net cash farm income | | $ 68,838 | | |
| Personal withdrawals & family expenses including nonfarm debt payments | $ 40,480 | | | |
| - Nonfarm income | 5,170 | | | |
| - Net cash withdrawals from the farm | | $ 35,310 | | |
| = Net Provided by Operating Activities | | | $ | 33,528 |
| Cash Flow From Investing Activities | | | | |
| Sale of assets: machinery | $ 651 | | | |
| + real estate | 0 | | | |
| + other stock & cert. | 27 | | | |
| = Total asset sales | | $ 678 | | |
| Capital purchases: expansion livestock | $ 3,638 | | | |
| + machinery | 27,541 | | | |
| + real estate | 32,946 | | | |
| + other stock& cert. | 397 | | | |
| - Total invested in farm assets | | $ 64,521 | | |
| = Net Provided by Investment Activities | | | $ | -63,843 |
| Cash Flow From Financing Activities | | | | |
| Money borrowed (intermediate & long term) | $ 43,727 | | | |
| + Money borrowed (short term) | 492 | | | |
| + Increase in operating debt | 5,451 | | | |
| + Cash from nonfarm capital used in business | 10,413 | | | |
| + Money borrowed - nonfarm | 1,267 | | | |
| = Cash inflow from financing | | $ 60,946 | | |
| Principal payments (intermediate & long term) | $ 30,738 | | | |
| + Principal payments (short term) | 409 | | | |
| + Decrease in operating debt | 0 | | | |
| - Cash outflow for financing | | $ 31,148 | | |
| = Net Provided by Financing Activities | | | $ | 29,798 |
| Cash Flow From Reserves | | | | |
| Beginning farm cash, checking & savings | | $ 3,227 | | |
| - Ending farm cash, checking & savings | | 3,125 | | |
| = Net Provided from Reserves | | | $ | 102 |
| Imbalance (error) | | | $ | -416 |

**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 2006. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2006 debt payments shown below.

**FARM DEBT PAYMENTS PLANNED**
Same Intensive Grazing Dairy Farms, 2004 & 2005

| | Same 25 Grazing Dairy Farms | | | Same 12 Farms in Top 30% Farms | | |
|---|---|---|---|---|---|---|
| | 2005 Payments | | Planned | 2005 Payments | | Planned |
| Debt Payments | Planned | Made | 2006 | Planned | Made | 2006 |
| Long term | $ 13,705 | $ 15,002 | $ 16,282 | $ 15,289 | $ 18,283 | $ 16,824 |
| Intermediate term | 20,917 | 32,700 | 14,848 | 26,908 | 38,009 | 17,774 |
| Short term | 151 | 608 | 312 | 225 | 175 | 50 |
| Operating (net reduction) | 496 | 2,973 | 731 | 583 | 436 | 1,271 |
| Accounts payable (net reduction) | 8 | 2,045 | 240 | 0 | 958 | 0 |
| Total | $ 35,277 | $ 53,328 | $ 32,413 | $ 43,005 | $ 57,861 | $ 35,919 |
| Per cow | $ 343 | $ 518 | | $ 365 | $ 492 | |
| Per cwt. 2005 milk | $ 2.08 | $ 3.15 | | $ 2.28 | $ 3.06 | |
| Percent of total 2005 farm receipts | 11% | 16% | | 12% | 16% | |
| Percent of 2005 milk receipts | 12% | 19% | | 14% | 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 2005 (as of December 31, 2004) that could have been made with the amount available for debt service in 2005. Farmers who did not participate in DFBS in 2004 have their 2005 coverage ratios based on planned debt payments for 2006.

**COVERAGE RATIOS**
Same Intensive Grazing Dairy Farms, 2004 & 2005

| Item | Average | Item | Average |
|---|---|---|---|
| Same 25 Grazing Dairy Farms, 2004 & 2005 | | | |
| (A)=Amount Available for Debt Service | $ 50,894 | (A')=Repayment Capacity | $ 55,452 |
| (B)=Debt Payments Planned for 2005 | $ 35,277 | (B)=Debt Payments Planned for 2005 | $ 35,277 |
| (A/B)=Cash Flow Coverage Ratio for 2005 | 1.44 | (A'/B)=Debt Coverage Ratio for 2005 | 1.57 |
| Same 12 Farms in Top 30% Farms, 2004 & 2005 | | | |
| (A)=Amount Available for Debt Service | $ 73,133 | (A')=Repayment Capacity | $ 91,845 |
| (B)=Debt Payments Planned for 2005 | $ 43,005 | (B)=Debt Payments Planned for 2005 | $ 43,005 |
| (A/B)=Cash Flow Coverage Ratio for 2005 | 1.70 | (A'/B)=Debt Coverage Ratio for 2005 | 2.14 |

**ANNUAL CASH FLOW WORKSHEET**

Intensive Grazing Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms Per Cow | 42 Grazing Dairy Farms Per Cwt. | Average Top 30% Farms Per Cow | Average Top 30% Farms Per Cwt. |
|---|---|---|---|---|
| Average no. of cows | 95 | | 115 | |
| Total cwt. of milk sold | | 15,868 | | 18,525 |
| Accrual Operating Receipts | | | | |
| Milk | $ 2,755 | $ 16.41 | $ 2,626 | $ 16.23 |
| Dairy cattle | 290 | 1.73 | 306 | 1.89 |
| Dairy calves | 81 | 0.49 | 107 | 0.66 |
| Other livestock | 14 | 0.08 | 25 | 0.16 |
| Crops | -3 | -0.02 | -2 | -0.01 |
| Misc. Receipts | 180 | 1.07 | 111 | 0.69 |
| Total | $ 3,317 | $ 19.76 | $ 3,172 | $ 19.61 |
| Accrual Operating Expenses | | | | |
| Hired labor | $ 306 | $ 1.82 | $ 259 | $ 1.60 |
| Dairy grain & concentrate | 670 | 3.99 | 626 | 3.87 |
| Dairy roughage | 82 | 0.49 | 89 | 0.55 |
| Nondairy feed | 0 | 0.00 | 0 | 0.00 |
| Professional nutritional services | 1 | 0.01 | 1 | 0.01 |
| Mach. hire, rent & lease | 68 | 0.41 | 47 | 0.29 |
| Mach. repair & vehicle expense | 173 | 1.03 | 135 | 0.83 |
| Fuel, oil & grease | 91 | 0.54 | 73 | 0.45 |
| Replacement livestock | 25 | 0.15 | 2 | 0.01 |
| Breeding | 34 | 0.20 | 28 | 0.17 |
| Vet & medicine | 67 | 0.40 | 61 | 0.37 |
| Milk marketing | 158 | 0.94 | 132 | 0.81 |
| Bedding | 19 | 0.11 | 13 | 0.08 |
| Milking supplies | 57 | 0.34 | 41 | 0.25 |
| Cattle lease | 2 | 0.01 | 6 | 0.04 |
| Custom boarding | 22 | 0.13 | 14 | 0.09 |
| bST expense | 7 | 0.04 | 2 | 0.01 |
| Livestock professional fees | 14 | 0.09 | 6 | 0.04 |
| Other livestock expense | 35 | 0.21 | 30 | 0.18 |
| Fertilizer & lime | 93 | 0.55 | 139 | 0.86 |
| Seeds & plants | 29 | 0.17 | 25 | 0.15 |
| Spray & other crop expense | 22 | 0.13 | 14 | 0.08 |
| Crop professional fees | 2 | 0.01 | 2 | 0.01 |
| Land, bldg., fence repair | 50 | 0.30 | 57 | 0.35 |
| Taxes | 73 | 0.43 | 62 | 0.38 |
| Real estate rent & lease | 58 | 0.35 | 37 | 0.23 |
| Insurance | 44 | 0.26 | 34 | 0.21 |
| Utilities | 81 | 0.48 | 71 | 0.44 |
| Miscellaneous | 29 | 0.17 | 32 | 0.20 |
| Total Less Interest Paid | $ 2,314 | $ 13.79 | $ 2,037 | $ 12.60 |
| Net Accrual Operating Income | Total | | Total | |
| (without interest paid) | $ 94,869 | | $ 129,999 | |
| - Change in livestock & crop invent.[19] | 9,646 | | 24,183 | |
| - Change in accounts receivable | 1,444 | | -1,377 | |
| - Change in feed & supply inventory[20] | 2,356 | | 5,090 | |
| + Change in accounts payable[21] | -442 | | -909 | |
| NET CASH FLOW | $ 80,982 | | $ 101,194 | |
| - Net family withdrawals | - 34,021 | | - 30,517 | |
| Available for Farm | $ 46,961 | | $ 70,678 | |
| - Farm debt payments | - 45,300 | | - 58,727 | |
| Available for Farm Investment | $ 1,661 | | $ 11,951 | |
| - Capital purchases | $ 64,521 | | $ 74,282 | |
| Additional Capital Needed | $ 62,860 | | $ 62,331 | |

[19]Includes change in advance government receipts. [20]Includes change in prepaid expenses. [21]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 Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[23] | | | Average Top 30% Farms[23] | | |
|---|---|---|---|---|---|---|
| Land | Owned | Rented | Total | Owned | Rented | Total |
| Tillable | 154 | 110 | 264 | 178 | 119 | 297 |
| Nontillable | 36 | 14 | 50 | 15 | 19 | 34 |
| Other nontill. | 100 | 9 | 109 | 97 | 0 | 97 |
| Total | 290 | 133 | 423 | 290 | 138 | 428 |
| Crop Yields | Farms | Acres[22] | Prod/Acre | Farms | Acres[22] | Prod/Acre |
| Hay crop | 38 | 158 | 1.9 tn DM | 13 | 132 | 2.0 tn DM |
| Corn silage | 27 | 53 | 14.9 tn | 8 | 52 | 16.6 tn |
| | | | 5.2 tn DM | | | 6.0 tn DM |
| Other forage | 5 | 18 | 1.6 tn DM | 2 | 19 | 1.7 tn DM |
| Total forage | 38 | 198 | 2.5 tn DM | 13 | 167 | 2.8 tn DM |
| Corn grain | 4 | 49 | 119 bu | 0 | 0 | 0 bu |
| Oats | 0 | 0 | 0 bu | 0 | 0 | 0 bu |
| Wheat | 2 | 20 | 28 bu | 0 | 0 | 0 bu |
| Other crops | 9 | 50 | | 4 | 71 | |
| Tillable pasture | 25 | 110 | | 11 | 117 | |
| Idle | 9 | 19 | | 4 | 23 | |
| Total Tillable Acres | 42 | 264 | | 13 | 297 | |

[22]This column represents the average acreage for the farms producing that crop. For the 42 New York dairy farms, average acreages including those farms not producing were hay crop 143, corn silage 34, corn grain 2, oats 1, wheat 1, tillable pasture 65, and idle 4.

Average crop acres and yields compiled for the region 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 Dairy Farms, 2005

| Item | 38 Grazing Dairy Farms[23] | Average Top 30% Farms[23] |
|---|---|---|
| Total tillable acres per cow | 2.86 | 2.60 |
| Total forage acres per cow | 1.99 | 1.45 |
| Harvested forage dry matter, tons per cow | 5.03 | 4.04 |

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

**Cropping Analysis** (continued)

A number of cooperators have allocated crop expenses among the hay crop, corn, and other crops produced. Fertilizer and lime, seeds and plants, and spray and other crop expenses have been computed per acre and per production unit for hay and corn. Additional expense items such as fuels, labor, and machinery repairs are not included. Intensive grazing was used by all farms reported in the below tables.

**CROP RELATED ACCRUAL EXPENSES**
Intensive Grazing Dairy Farms Reporting, 2005

| Item | Total Per Till. Acre | All Corn Per Acre | Corn Silage Per Ton DM | Corn Grain Per Dry Sh. Bu. | Hay Crop Per Acre | Hay Crop Per Ton DM | Pasture Per Till. Pasture Acre | Pasture Per Total Pasture Acre |
|---|---|---|---|---|---|---|---|---|
| All Grazing Farms | | | | | | | | |
| No. of farms reporting | 38[24] | 11 | | | 11 | | 7 | |
| Ave. number of acres | 285 | 80 | | | 196 | | 4 | 64 |
| Fert. & lime | $ 33.91 | $ 66.89 | $ 11.83 | $ 0.11 | $ 24.56 | $ 13.06 | $ 12.59 | $ 29.03 |
| Seeds & plants | 10.48 | 36.08 | 7.15 | 0.08 | 8.91 | 5.33 | 1.33 | 0.35 |
| Spray & other | 7.89 | 29.38 | 6.47 | 0.08 | 0.86 | 0.50 | 0.00 | 0.00 |
| TOTAL | $ 52.28 | $ 132.35 | $ 25.45 | $ 0.27 | $ 34.33 | $ 18.89 | $ 13.92 | $ 29.38 |
| Average Top 30% Farms | | | | | | | | |
| No. of farms reporting | 13 | 2 | | | 3 | | 3 | |
| Ave. number of acres | 297 | 38 | | | 144 | | 9 | 59 |
| Fert. & lime | $ 53.36 | $ 89.31 | $ 14.41 | $ 0.00 | $ 51.58 | $ 29.02 | $ 29.37 | $ 42.38 |
| Seeds & plants | 9.55 | 44.60 | 9.75 | 0.00 | 5.33 | 2.33 | 3.11 | 0.82 |
| Spray & other | 5.27 | 47.53 | 9.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | $ 68.18 | $ 181.44 | $ 33.35 | $ 0.00 | $ 56.91 | $ 31.35 | $ 32.48 | $ 43.20 |

[24]Excludes farms that do not harvest forages.

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 Dairy Farms, 2005

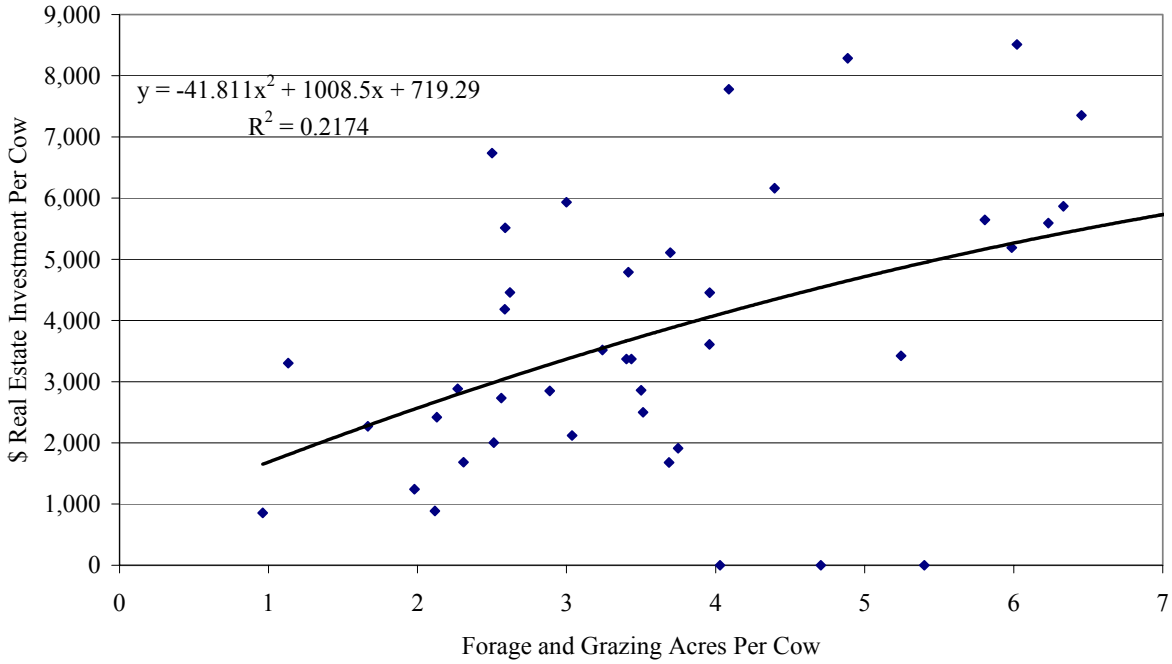
| Machinery Expense | 38 Grazing Dairy Farms[25] Total Expenses | 38 Grazing Dairy Farms[25] Per Tillable Acre | Average Top 30% Farms[25] Total Expenses | Average Top 30% Farms[25] Per Tillable Acre |
|---|---|---|---|---|
| Fuel, oil & grease | $ 9,131 | $ 32.05 | $ 8,350 | $ 28.08 |
| Mach. repair & vehicle exp. | 17,665 | 62.01 | 15,440 | 51.92 |
| Machine hire, rent & lease | 7,077 | 24.84 | 5,434 | 18.27 |
| Interest (5%) | 6,777 | 23.79 | 6,375 | 21.44 |
| Depreciation | 18,672 | 65.54 | 14,567 | 48.99 |
| Total | $ 59,322 | $ 208.23 | $ 50,166 | $ 168.70 |

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

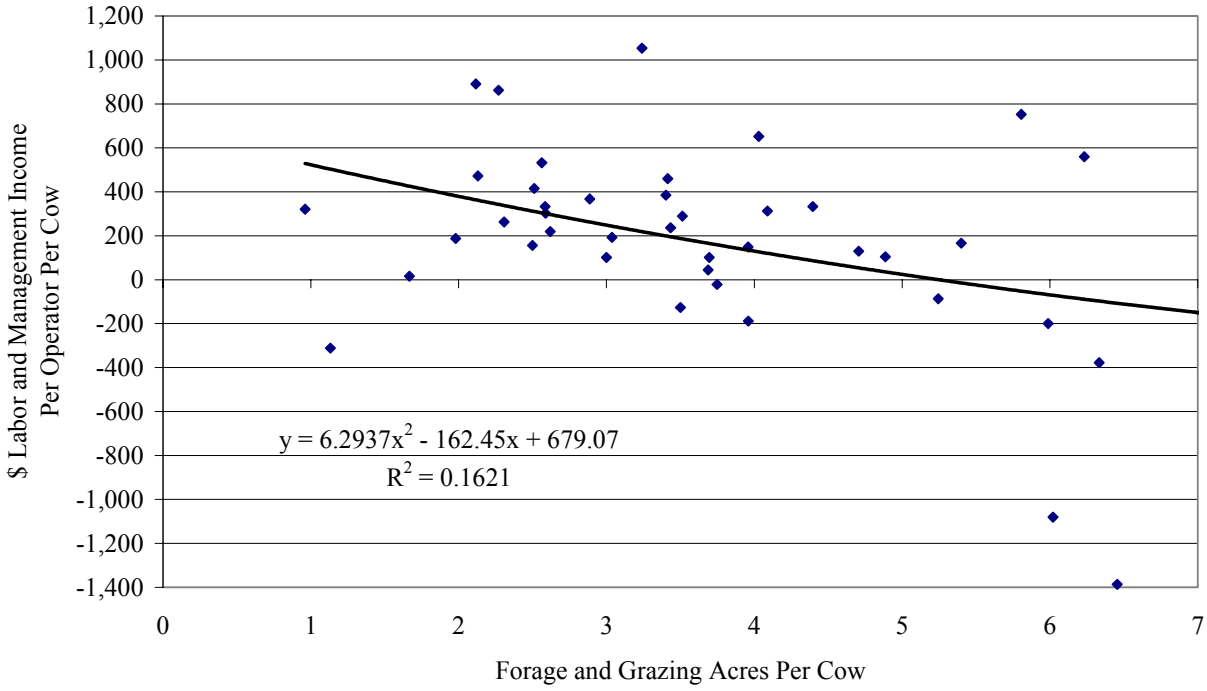
**Cropping Analysis** (continued)

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**
42 Intensive Grazing Farms, 2005




**LABOR AND MANAGEMENT INCOME/OPERATOR/COW & FORAGE AND GRAZING ACRES/COW**
42 Intensive Grazing Farms, 2005



**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 Dairy Farms, 2005

| | Dairy Cows | | Bred Heifers | | Open Heifers | | Calves | |
|---|---|---|---|---|---|---|---|---|
| Item | No. | Value | No. | Value | No. | Value | No. | Value |
| 42 Grazing Dairy Farms[26] | | | | | | | | |
| Beg. year (owned) | 92 | $ 113,802 | 24 | $ 29,926 | 26 | $ 21,522 | 20 | $ 10,395 |
| + Change w/o apprec. | | 487 | | 8,968 | | -1,988 | | 2,849 |
| + Appreciation | | 5,532 | | 2,480 | | 874 | | 2,604 |
| End year (owned) | 90 | $ 119,822 | 31 | $ 41,375 | 24 | $ 20,408 | 24 | $ 15,848 |
| End including leased | 94 | | | | | | | |
| Average number | 95 | | 76 | (all age groups) | | | | |
| Average Top 30% Farms[26] | | | | | | | | |
| Beg. year (owned) | 103 | $ 128,423 | 27 | $ 34,316 | 29 | $ 26,414 | 28 | $ 16,485 |
| + Change w/o apprec. | | 5,854 | | 20,228 | | -8,675 | | 6,696 |
| + Appreciation | | 11,605 | | 5,694 | | 1,203 | | 7,538 |
| End year (owned) | 106 | $145,882 | 41 | $ 60,238 | 21 | $ 18,942 | 37 | $ 30,719 |
| End including leased | 116 | | | | | | | |
| Average number | 115 | | 94 | (all age groups) | | | | |

[26] 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 Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[27] | Average Top 30% Farms[27] |
|---|---|---|
| Total milk sold, pounds | 1,586,813 | 1,852,540 |
| Milk sold per cow, pounds | 16,783 | 16,174 |
| Average milk plant test, percent butterfat | 3.81% | 3.84% |

[27] 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 Dairy Farms, 2005

| | 42 Grazing Dairy Farms | | Average Top 30% Farms | |
|---|---|---|---|---|
| Item | Number | Percent[28] | Number | Percent[28] |
| Cows sold for beef | 19 | 20.1 | 21 | 18.1 |
| Cows sold for dairy | 5 | 5.5 | 3 | 2.4 |
| Cows died | 5 | 5.2 | 5 | 4.8 |
| Culling rate[29] | | 25.3 | | 22.8 |

[28]Percent of average number of cows in the herd. [29]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 Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[30] Per Cow | 42 Grazing Dairy Farms[30] Per Cwt. | Average Top 30% Farms[30] Per Cow | Average Top 30% Farms[30] Per Cwt. |
|---|---|---|---|---|
| Accrual Cost of Producing Milk | | | | |
| Operating costs | $ 1,904 | $ 11.35 | $ 1,657 | $ 10.24 |
| Purchased inputs costs | $ 2,182 | $ 13.00 | $ 1,896 | $ 11.72 |
| Total Costs | $ 2,928 | $ 17.45 | $ 2,470 | $ 15.27 |
| Accrual Receipts From Milk | $ 2,755 | $ 16.41 | $ 2,626 | $ 16.23 |
| Net milk receipts | $ 2,617 | $ 15.47 | $ 2,740 | $ 15.42 |
| Net Farm Income without Appreciation | $ 572 | $ 3.41 | $ 730 | $ 4.50 |
| Net Farm Income with Appreciation | $ 854 | $ 5.09 | $ 1,045 | $ 6.46 |

[30] 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 Dairy Farms, 2005

| Item | 42 Grazing Dairy Farms[30] Per Cow | 42 Grazing Dairy Farms[30] Per Cwt. | Average Top 30% Farms[30] Per Cow | Average Top 30% Farms[30] Per Cwt. |
|---|---|---|---|---|
| Purchased dairy grain & concentrate | $ 670 | $ 3.99 | $ 626 | $ 3.87 |
| Purchased dairy roughage | 82 | 0.49 | 89 | 0.55 |
| Total Purchased Dairy Feed | $ 752 | $ 4.48 | $ 715 | $ 4.42 |
| Purchased grain & concentrate as % of milk receipts | 26% | | 25% | |
| Purchased feed & crop expense | $ 896 | $ 5.34 | $ 894 | $ 5.53 |
| Purchased feed & crop expense as % of milk receipts | 34% | | 33% | |
| Breeding | $ 34 | $ 0.20 | $ 28 | $ 0.17 |
| Veterinary & medicine | 67 | 0.40 | 61 | 0.37 |
| Milk marketing | 158 | 0.94 | 132 | 0.81 |
| Bedding | 19 | 0.11 | 13 | 0.08 |
| Milking supplies | 57 | 0.34 | 41 | 0.25 |
| Cattle lease | 2 | 0.01 | 6 | 0.04 |
| Custom boarding | 23 | 0.13 | 14 | 0.09 |
| bST expense | 7 | 0.04 | 2 | 0.01 |
| Livestock professional fees | 14 | 0.09 | 6 | 0.04 |
| Other livestock expense | 35 | 0.21 | 30 | 0.18 |

**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 Dairy Farms, 2005

| Item | Per Worker | Per Cow | Per Tillable Acre | Per Tillable Acre Owned |
|---|---|---|---|---|
| 42 Grazing Dairy Farms[31] | | | | |
| Farm capital | $ 263,554 | $ 7,526 | $ 2,700 | $ 4,621 |
| Real estate | | 3,369 | | 2,069 |
| Machinery & equipment | 46,832 | 1,337 | 480 | |
| Ratios: | | | | |
| Asset Turnover Ratio | Operating Expense | Interest Expense | | Depreciation Expense |
| 0.48 | 0.71 | 0.03 | | 0.08 |
| Average Top 30% Farms[31] | | | | |
| Farm capital | $ 296,577 | $ 6,758 | $ 2,603 | $ 4,345 |
| Real estate | | 2,870 | | 1,845 |
| Machinery & equipment | 48,851 | 1,113 | 429 | |
| Ratios: | | | | |
| Asset Turnover Ratio | Operating Expense | Interest Expense | | Depreciation Expense |
| 0.52 | 0.66 | 0.04 | | 0.07 |

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

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

**LABOR FORCE INVENTORY AND ANALYSIS**
Intensive Grazing Dairy Farms, 2005

| Labor Force | Months | Age | Years of Education | Value of Labor & Management |
|---|---|---|---|---|
| 42 Grazing Dairy Farms | | | | |
| Operator number 1 | 12.4 | 44 | 13 | $ 30,821 |
| Operator number 2 | 4.2 | 39 | 12 | 9,060 |
| Family paid | 3.4 | | | |
| Family unpaid | 2.3 | | | |
| Hired | 10.1 | | | |
| Total | 32.4 | / 12 = 2.70 Worker Equivalent | | |
| | | 1.32 Operator/Manager Equivalent | | |
| Average Top 30% Farms | | | | |
| Total Labor Force | 31.4 | / 12 = 2.61 Worker Equivalent | | |
| Operator's Labor | | 1.15 Operator/Manager Equivalent | | |

| Labor Efficiency | 42 Grazing Dairy Farms Total | 42 Grazing Dairy Farms Per Worker | Average Top 30% Farms Total | Average Top 30% Farms Per Worker |
|---|---|---|---|---|
| Cows, average number | 95 | 35 | 115 | 44 |
| Milk sold, pounds | 1,586,813 | 587,165 | 1,852,540 | 709,106 |
| Tillable acres | 264 | 98 | 297 | 114 |

| Labor Costs | 42 Grazing Dairy Farms Per Cow | 42 Grazing Dairy Farms Per Cwt. | Average Top 30% Farms Per Cow | Average Top 30% Farms Per Cwt. |
|---|---|---|---|---|
| Value of operator(s) labor ($2,200/month) | $ 387 | $ 2.31 | $ 297 | $ 1.83 |
| Family unpaid ($2,200/month) | 52 | 0.31 | 45 | 0.28 |
| Hired | 306 | 1.82 | 259 | 1.60 |
| Total Labor | $ 745 | $ 4.44 | $ 601 | $ 3.71 |
| Machinery Cost | $ 586 | $ 3.49 | $ 438 | $ 2.71 |
| Total Labor & Machinery | $ 1,331 | $ 7.93 | $ 1,039 | $ 6.42 |
| Hired labor expense per hired worker equivalent | $25,645 | | $26,281 | |
| Hired labor expense as % of milk sales | 11.1% | | 9.9% | |

## 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**
Same Intensive Grazing Dairy Farms, 2004 & 2005[32]

| | Same 25 Grazing Dairy Farms | | Same 12 Farms in Top 30% Farms | |
|---|---|---|---|---|
| Selected Factors | 2004 | 2005 | 2004 | 2005 |
| Size of Business | | | | |
| Average number of cows | 106 | 103 | 114 | 118 |
| Average number of heifers | 73 | 85 | 84 | 98 |
| Milk sold, pounds | 1,676,923 | 1,695,652 | 1,800,321 | 1,888,750 |
| Worker equivalent | 2.83 | 2.72 | 2.67 | 2.64 |
| Total tillable acres | 263 | 275 | 284 | 301 |
| Rates of Production | | | | |
| Milk sold per cow, pounds | 15,868 | 16,469 | 15,735 | 16,052 |
| Hay DM per acre, tons | 2.8 | 2.2 | 2.6 | 2.0 |
| Corn silage per acre, tons | 15.2 | 14.8 | 15.8 | 15.6 |
| Labor Efficiency | | | | |
| Cows per worker | 37 | 38 | 43 | 45 |
| Milk sold/worker, pounds | 592,552 | 623,401 | 674,278 | 715,435 |
| Cost Control | | | | |
| Grain & concentrate purchased as % of milk sales | 24% | 23% | 24% | 24% |
| Dairy feed & crop expense per cwt. milk | $ 5.48 | $ 5.32 | $ 5.99 | $ 5.55 |
| Labor & machinery costs/cow | $ 1,207 | $ 1,215 | $ 1,065 | $ 1,018 |
| Operating cost of producing cwt. of milk | $ 11.68 | $ 11.54 | $ 11.16 | $ 10.38 |
| Capital Efficiency[33] | | | | |
| Farm capital per cow | $ 6,664 | $ 7,514 | $ 6,138 | $ 6,692 |
| Machinery & equipment per cow | $ 1,145 | $ 1,317 | $ 989 | $ 1,084 |
| Asset turnover ratio | 0.51 | 0.48 | 0.56 | 0.52 |
| Profitability | | | | |
| Net farm income without appreciation | $ 64,620 | $ 61,439 | $ 83,459 | $ 83,596 |
| Net farm income with appreciation | $ 92,318 | $ 94,609 | $ 112,689 | $ 121,535 |
| Labor & management income per operator/manager | $ 25,038 | $ 21,934 | $ 46,431 | $ 48,988 |
| Rate of return on equity capital with appreciation | 9.5% | 9.2% | 17.2% | 16.4% |
| Rate of return on all capital with appreciation | 8.1% | 8.1% | 12.4% | 12.5% |
| Financial Summary | | | | |
| Farm net worth, end year | $ 510,734 | $ 574,212 | $ 459,739 | $ 545,369 |
| Debt to asset ratio | 0.31 | 0.29 | 0.37 | 0.35 |
| Farm debt per cow | $ 2,172 | $ 2,336 | $ 2,429 | $ 2,453 |

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

**RECEIPTS AND EXPENSES PER COW AND PER CWT.**
Same 25 Intensive Grazing Dairy Farms, 2004 & 2005

| | 2004 | | 2005 | |
|---|---|---|---|---|
| Item | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 106 | | 103 | |
| Cwt. Of Milk Sold | | 16,769 | | 16,957 |
| | | | | |
| ACCRUAL OPERATING RECEIPTS | | | | |
| Milk | $ 2,756 | $17.37 | $ 2,747 | $16.68 |
| Dairy cattle | 208 | 1.31 | 308 | 1.87 |
| Dairy calves | 55 | 0.34 | 88 | 0.53 |
| Other livestock | 7 | 0.04 | 18 | 0.11 |
| Crops | 33 | 0.21 | -21 | -0.13 |
| Miscellaneous receipts | 101 | 0.64 | 141 | 0.86 |
| Total Receipts | $ 3,160 | $19.91 | $ 3,280 | $19.92 |
| | | | | |
| ACCRUAL OPERATING EXPENSES | | | | |
| Hired labor | $ 270 | $ 1.70 | $ 282 | $ 1.71 |
| Dairy grain & concentrate | 658 | 4.14 | 645 | 3.91 |
| Dairy roughage | 98 | 0.62 | 89 | 0.54 |
| Nondairy feed | 0 | 0.00 | 1 | 0.00 |
| Professional nutritional services | 1 | 0.01 | 1 | 0.00 |
| Machine hire/rent/lease | 78 | 0.49 | 65 | 0.39 |
| Machinery repair & vehicle expense | 162 | 1.02 | 158 | 0.96 |
| Fuel, oil & grease | 65 | 0.41 | 82 | 0.50 |
| Replacement livestock | 12 | 0.07 | 30 | 0.18 |
| Breeding | 31 | 0.19 | 34 | 0.21 |
| Veterinary & medicine | 62 | 0.39 | 73 | 0.44 |
| Milk marketing | 158 | 0.99 | 168 | 1.02 |
| Bedding | 20 | 0.12 | 17 | 0.10 |
| Milking supplies | 49 | 0.31 | 61 | 0.37 |
| Cattle lease | 5 | 0.03 | 3 | 0.02 |
| Custom boarding | 19 | 0.12 | 18 | 0.11 |
| bST expense | 7 | 0.05 | 8 | 0.05 |
| Livestock professional fees | 12 | 0.08 | 13 | 0.08 |
| Other livestock expense | 36 | 0.23 | 39 | 0.24 |
| Fertilizer & lime | 74 | 0.47 | 101 | 0.61 |
| Seeds & plants | 18 | 0.11 | 23 | 0.14 |
| Spray/other crop expense | 18 | 0.11 | 17 | 0.11 |
| Crop professional fees | 4 | 0.02 | 1 | 0.01 |
| Land, building, fence repair | 48 | 0.30 | 61 | 0.37 |
| Taxes | 59 | 0.37 | 74 | 0.45 |
| Real estate rent/lease | 48 | 0.30 | 55 | 0.34 |
| Insurance | 34 | 0.22 | 47 | 0.28 |
| Utilities | 69 | 0.43 | 77 | 0.47 |
| Interest paid | 108 | 0.68 | 127 | 0.77 |
| Other professional fees | 13 | 0.08 | 12 | 0.07 |
| Miscellaneous | 19 | 0.12 | 15 | 0.09 |
| Total Operating Expenses | $ 2,254 | $14.21 | $ 2,396 | $14.55 |
| Expansion Livestock | 2 | 0.01 | 37 | 0.23 |
| Extraordinary Expense | 48 | 0.30 | 19 | 0.12 |
| Machinery Depreciation | 149 | 0.94 | 154 | 0.93 |
| Real Estate Depreciation | 95 | 0.60 | 77 | 0.47 |
| Total Expenses | $ 2,548 | $16.06 | $ 2,683 | $16.30 |
| Net Farm Income Without Appreciation | $ 611 | $ 3.85 | $ 597 | $ 3.62 |

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

Same 12 Farms in Top 30% Intensive Grazing Dairy Farms, 2004 & 2005

| | 2004 | | 2005 | |
|---|---|---|---|---|
| Item | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 114 | | 118 | |
| Cwt. Of Milk Sold | | 18,003 | | 18,887 |
| | | | | |
| ACCRUAL OPERATING RECEIPTS | | | | |
| Milk | $ 2,722 | $17.30 | $ 2,614 | $16.29 |
| Dairy cattle | 275 | 1.74 | 315 | 1.96 |
| Dairy calves | 65 | 0.41 | 110 | 0.69 |
| Other livestock | 15 | 0.10 | 27 | 0.17 |
| Crops | 33 | 0.21 | -25 | -0.16 |
| Miscellaneous receipts | 79 | 0.50 | 116 | 0.72 |
| Total Receipts | $ 3,189 | $20.27 | $ 3,158 | $19.67 |
| | | | | |
| ACCRUAL OPERATING EXPENSES | | | | |
| Hired labor | $ 237 | $ 1.51 | $ 267 | $ 1.66 |
| Dairy grain & concentrate | 661 | 4.20 | 622 | 3.87 |
| Dairy roughage | 127 | 0.81 | 93 | 0.58 |
| Nondairy feed | 0 | 0.00 | 0 | 0.00 |
| Professional nutritional services | 1 | 0.01 | 1 | 0.01 |
| Machine hire/rent/lease | 80 | 0.51 | 46 | 0.29 |
| Machinery repair & vehicle expense | 151 | 0.96 | 136 | 0.85 |
| Fuel, oil & grease | 59 | 0.37 | 72 | 0.45 |
| Replacement livestock | 8 | 0.05 | 2 | 0.02 |
| Breeding | 25 | 0.16 | 29 | 0.18 |
| Veterinary & medicine | 66 | 0.42 | 63 | 0.39 |
| Milk marketing | 126 | 0.80 | 132 | 0.82 |
| Bedding | 15 | 0.09 | 12 | 0.08 |
| Milking supplies | 41 | 0.26 | 39 | 0.24 |
| Cattle lease | 8 | 0.05 | 6 | 0.04 |
| Custom boarding | 15 | 0.09 | 15 | 0.09 |
| bST expense | 2 | 0.01 | 2 | 0.01 |
| Livestock professional fees | 12 | 0.08 | 6 | 0.04 |
| Other livestock expense | 33 | 0.21 | 31 | 0.19 |
| Fertilizer & lime | 114 | 0.72 | 138 | 0.86 |
| Seeds & plants | 19 | 0.12 | 24 | 0.15 |
| Spray/other crop expense | 15 | 0.09 | 12 | 0.08 |
| Crop professional fees | 7 | 0.05 | 2 | 0.01 |
| Land, building, fence repair | 57 | 0.36 | 59 | 0.37 |
| Taxes | 51 | 0.33 | 61 | 0.38 |
| Real estate rent/lease | 29 | 0.19 | 30 | 0.18 |
| Insurance | 30 | 0.19 | 34 | 0.21 |
| Utilities | 66 | 0.42 | 70 | 0.44 |
| Interest paid | 129 | 0.82 | 135 | 0.84 |
| Other professional fees | 15 | 0.10 | 12 | 0.07 |
| Miscellaneous | 19 | 0.12 | 21 | 0.13 |
| Total Operating Expenses | $ 2,218 | $14.10 | $ 2,173 | $13.54 |
| Expansion Livestock | 4 | 0.03 | 36 | 0.23 |
| Extraordinary Expense | 25 | 0.16 | 28 | 0.18 |
| Machinery Depreciation | 117 | 0.74 | 121 | 0.75 |
| Real Estate Depreciation | 95 | 0.61 | 88 | 0.55 |
| Total Expenses | $ 2,459 | $15.64 | $ 2,446 | $15.25 |
| Net Farm Income Without Appreciation | $ 729 | $ 4.64 | $ 710 | $ 4.43 |

**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**

42 Intensive Grazing Dairy Farms, 2005

| Size of Business | | | Rate of Production | | | Labor Efficiency | |
|---|---|---|---|---|---|---|---|
| Worker Equiv-alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| (14)[34] | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 5.48 | 255 | 4,167,544 | 22,163 | 3.4 | 23 | 54 | 865,855 |
| 2.88 | 92 | 1,606,555 | 18,968 | 2.3 | 18 | 37 | 674,099 |
| 2.21 | 58 | 1,094,815 | 17,537 | 1.8 | 16 | 30 | 542,173 |
| 1.81 | 47 | 820,475 | 15,451 | 1.4 | 14 | 24 | 397,833 |
| 1.41 | 34 | 478,951 | 12,377 | 1.0 | 9 | 17 | 260,709 |

| Cost Control | | | | | |
|---|---|---|---|---|---|
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk |
| (12) | (12) | (14) | (14) | (12) | (12) |
| $454 | 19% | $304 | $915 | $625 | $3.99 |
| 612 | 22 | 439 | 1,344 | 825 | 4.67 |
| 707 | 26 | 601 | 1,571 | 953 | 5.66 |
| 827 | 28 | 728 | 1,740 | 1,030 | 6.16 |
| 970 | 35 | 1,014 | 2,141 | 1,301 | 7.55 |

| Value and Cost of Milk Production | | | Profitability | | | |
|---|---|---|---|---|---|---|
| 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 | Change in Net Worth with Appreciation |
| (12) | (12) | (12) | (4) | (4) | (4) | (8) |
| $3,607 | $7.16 | $14.47 | $230,324 | $139,822 | $77,146 | $203,347 |
| 3,084 | 10.30 | 16.77 | 78,439 | 65,159 | 30,438 | 40,490 |
| 2,827 | 11.47 | 18.34 | 57,017 | 47,266 | 17,613 | 25,376 |
| 2,476 | 12.24 | 20.34 | 38,176 | 25,686 | 4,431 | 7,423 |
| 2,043 | 14.94 | 25.03 | 13,594 | 2,574 | -21,575 | -25,609 |

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

## 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
53 New York Dairy Farms, 2005

| Animals Entering Herd | Average |
|---|---|
| Number calving in 2005 for first time | 139 |
| Animals purchased, percent[35] | 11% |
| Animals raised by farm, percent[36] | 89% |
| **Current Heifer Inventory** | |
| Raised on dairy, percent | 86% |
| Raised by a custom grower, percent | 14% |

[35]Animals purchased are animals purchased from a different farm and were not the farm's genetics.
[36]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, 139 animals calved for the first time in 2005. The breakdown of these animals for source was 11 percent purchased and 89 percent raised by the farm. Of the current heifer inventory, 86 percent were raised on the dairy and 14 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, 25 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 two tables. The tables are divided into six 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 related are included in market premiums. The fourth area looks at the expenses associated with marketing milk. A new 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 income from the compact program or from forward contracting or hedging programs. The sixth 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 six 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 42 reports the averages for these different areas. The table on page 43 contains the range for each of the individual lines of the report. This table is in farm business chart format with each item sorted independently and ranked by fourths. Numbers for the different areas will not add to the totals for that quartile or to the net price received because the highest farms for each item were averaged, not the same farms throughout the six areas. This table shows the range of income and expenses received by farms for all the 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[37] MILK INCOME AND MARKETING REPORT**
25 Intensive Grazing Dairy Farms, 2005

| | Pounds | Percent | Price/Pound | Total | $/Cwt of Milk |
|---|---|---|---|---|---|
| **BASE FARM PRICE** | | | | | |
| Butterfat | 59,493.84 | 3.86% | $ 1.69 | $ 100,498.53 | $ 6.52 |
| Protein | 48,207.47 | 3.13% | $ 2.42 | $ 116,670.16 | $ 7.57 |
| Solids | 94,940.47 | 6.16% | $ 0.11 | $ 10,658.58 | $ 0.69 |
| **Total Component Contribution** | | | | | $14.78 |
| **PPD** | 1,541,107.89 | | | $ 13,021.58 | $ 0.84 |
| **Base Farm Price** | | | | | $ 15.62 |
| **Premiums** | | | | | |
| Quality | | | | $ 1,257.37 | $ 0.08 |
| Volume | | | | $ 1,414.42 | $ 0.09 |
| Market Premiums | | | | $ 8,042.79 | $ 0.52 |
| **Total Premiums** | | | | | $ 0.69 |
| **BASE FARM PRICE + PREMIUM** | | | | | $ 16.31 |
| **Deductions** | | | | | |
| Promo | | | | $ 2,419.05 | $ 0.16 |
| Hauling + Stop Charges | | | | $ 11,663.68 | $ 0.76 |
| Market Fees & Coop Dues | | | | $ 1,333.74 | $ 0.09 |
| **Total Deductions** | | | | | $ 1.01 |
| **BASE FARM PRICE + PREMIUMS - DEDUCTIONS** | | | | | $ 15.30 |
| **Marketing Programs** | | | | | |
| Futures Contracts, Forward Contracting, Etc. | | | | $ 0.00 | $ 0.00 |
| **Total Marketing Income** | | | | | $ 0.00 |
| **Patronage Dividends** | | | | $ 652.32 | $ 0.04 |
| **NET PRICE RECEIVED ON FARM, ALL SOURCES** | | | | | **$ 15.34** |
| **PPD - Hauling, $ per cwt.** | | | | | $ 0.08 |
| **PPD - Hauling + Market Premiums, $ per cwt.** | | | | | $ 0.60 |
| **Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per cwt.** | | | | | $ 0.52 |

[37]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.

**MILK PRICE INFORMATION BY QUARTILE**[38, 39]
(Each Category Sorted Independently)
25 Intensive Grazing Dairy Farms, 2005

| | Lowest Quartile | ◄——— | ——— | Highest Quartile |
|---|---|---|---|---|
| Butterfat, % | 3.53 | 3.67 | 3.80 | 4.10 |
| Protein, % | 2.97 | 3.03 | 3.11 | 3.26 |
| Other Solids, % | 5.14 | 5.65 | 5.68 | 6.12 |
| | | | | |
| Butterfat, $ per Cwt. | 6.03 | 6.29 | 6.50 | 7.11 |
| Protein, $ per Cwt. | 7.24 | 7.43 | 7.71 | 8.12 |
| Other solids, $ per Cwt. | 0.67 | 0.69 | 0.71 | 0.73 |
| **Total Component Value per Cwt.** | **$14.00** | **$14.46** | **$14.83** | **$15.94** |
| | | | | |
| PPD, $ per Cwt. | 0.57 | 0.70 | 0.79 | 1.07 |
| | | | | |
| **Base Farm Price per Cwt.** | **$14.75** | **$15.26** | **$15.65** | **$16.67** |
| | | | | |
| Quality, $ per Cwt. | .04 | .12 | .22 | .56 |
| Volume, $ per Cwt. | .00 | .01 | .08 | .28 |
| Market premium, $ per Cwt. | -.08 | .13 | .25 | .58 |
| Total Premium, $ per Cwt. | **.15** | **.35** | **.61** | **1.04** |
| | | | | |
| **Base Farm Price + Premiums per Cwt.** | **$15.08** | **$15.59** | **$16.34** | **$17.43** |
| | | | | |
| Promotion, $ per Cwt. | .13 | .15 | .20 | .30 |
| Hauling, $ per Cwt. | .48 | .60 | .67 | .96 |
| Market fees & coop dues per Cwt. | .00 | .00 | .06 | .13 |
| **Total Marketing Expenses per Cwt.** | **$ .72** | **$ .82** | **$.91** | **$1.22** |
| | | | | |
| **Base + Premiums – Deductions per Cwt.** | **$14.20** | **$14.66** | **$15.41** | **$16.53** |
| | | | | |
| Futures contract, forward contracting, $ per Cwt. | .00 | .00 | .00 | .00 |
| **Total Marketing Income, $ per Cwt.** | **$ .00** | **$ .00** | **$ .00** | **$ .00** |
| | | | | |
| **Patronage Dividends, $ per Cwt.** | **$ .00** | **$ .00** | **$ .01** | **$ .19** |
| | | | | |
| **Net Price Received From All Sources, $ per Cwt.** | **$14.21** | **$14.74** | **$15.51** | **$16.55** |
| | | | | |
| **PPD - hauling, $ per Cwt.** | **-0.09** | **0.07** | **0.15** | **0.32** |
| **PPD - hauling + mkt premiums, $ per Cwt.** | **-0.04** | **0.23** | **0.39** | **0.71** |
| **Net Marketing Value (PPD + Total Premiums – Total Deductions), $ per Cwt.** | **-0.11** | **0.22** | **0.48** | **0.96** |

[38]Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals.

[39]Holstein and Jersey herds are included.

## 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 18)

**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.

**bST Usage** - An estimate of the percentage of herd, on average, that was injected with bovine somatotropin during the year.

**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.

**Operator Resources/cwt.** - The total value of labor contributed to the farm from all owner/operators. This measure is calculated by multiplying the number of months of labor provided by all owner/operators by $2,200 and dividing by the number of cwt. produced during the year.

**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.

**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 $2,200 per month plus the value of operator(s) labor at $2,200 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.

**INDEX**

## OTHER A.E.M. EXTENSION BULLETINS

| EB No | Title | Fee (if applicable) | Author(s) |
|---|---|---|---|
| 2006-06 | Dairy Farm Business Summary, Western and Central Plateau Region, 2005 | ($12.00) | Knoblauch,W., Putnam, L., Karszes, J., Grace, J., Munsee, D., Schuelke, J. and J. Petzen |
| 2006-05 | Dairy Farm Business Summary, Western and Central Plain Region, 2005 | ($12.00) | Knoblauch, W., Putnam, L., Karszes, J., Hanchar, J., Moag, G. and J. Sauter |
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| 2006-03 | Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2005 | ($16.00) | Karszes, J., Knoblauch, W. and L. Putnam |
| 2006-02 | Moving Families Forward by New York FarmNet (video) 26:44 | ($9.99) | Staehr, A. |
| 2006-01 | A Value-Added Opportunity: Market Potential for Specialty Cheeses in Select New York Markets | | Gloy, A. and M. Stephenson |
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