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DAIRY FARM BUSINESS SUMMARY

NEW YORK SMALL HERD FARMS, 140 COWS OR FEWER, 2014



*You can't manage what you can't measure.
But if you measure it, you can improve it!*

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2014 DAIRY FARM BUSINESS SUMMARY
Small Herd Dairy Farms
140 Cows or Fewer
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2014 DAIRY FARM BUSINESS SUMMARY SMALL HERD DAIRY 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 their farm business. The information in this report represents averages of the data submitted from dairy farms in New York for 2014 with herds of 140 Cows or Fewer.

Small farms are facing increasing management challenges in their efforts to control costs and remain profitable. This publication reports the average performance and characteristics of small farms and the average of the Top 50 Percent of those small farms with the highest rate of return on assets without appreciation. Thus, not only can the average performance of small farms be used as a benchmark, but the performance of the most profitable small farms as well. Identifying strengths and areas for improvement by comparing your business to that of similar farms is an important first step in focusing attention on ways to improve the business.

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 data and the application of modern farm business analysis techniques. This information can also be used to establish goals that enable the business to better fulfill its mission. In short, DFBS provides business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

Format Features

This report follows the same general format as the 2014 DFBS individual farm report received by participating dairy farmers. The analysis tables have a column that compares the average to the top 50% of the farms by rate of return on all capital without appreciation. This report may be used by any dairy farm manager who wants to compare his or her business with the average data of small farms. The individual farm data, the averages and other data can then be used to establish goals for the business. Non-DFBS participants can register and download a DFBS Data Check-in Form at <http://dfbs.cornell.edu>. After collecting the data on the form, it can be entered in the U. S. Top Dairies business summary program at the same web site to obtain a summary of their business. More information about the Dairy Farm Business Summary and Analysis Project may be found at <http://dfbs.dyson.cornell.edu/>.

This 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;
- (7) a capital and labor efficiency analysis; and
- (8) progress of the farm business over the past two years.

*The small herd summary is comprised of farms with 140 or fewer cows. Many counties had farms that met this criteria in 2014. This report was written by Wayne A. Knoblauch, Professor, Farm Management; Richard Kimmich, Extension Support Specialist, Dairy Farm Business Summary and Analysis Program; and Jason Karszes, Senior Extension Associate, Pro-Dairy. Cathryn Dymond was in charge of data and publication preparation.

PROGRESS OF THE FARM BUSINESS

2014 continued the trend of improving dairy profitability with the historically high milk prices more than offsetting the continued increase in input costs, making for larger margins.

The same 33 farms participated in both 2013 and 2014 for this report. Average farm size stayed at 77 cows with a heifer inventory increase of 6.5% or 4 animals. Tillable acres rose 2.9% or 8 acres. Hay DM ton/acres rose 4.8% reflecting favorable weather conditions; corn silage/acre also saw an increase at 12.4% to 18.1 tons/acres in 2014. Milk sold per cow decreased -0.4% going from 19,982 to 19,909.

Worker equivalents rose 3.7%, which caused cows per worker to drop to 28 from 29 the previous year. Milk sold/worker dropped by 2.3% to 560,302 lbs. Hired labor cost per hundredweight rose 8.6% percent from \$1.52 to \$1.65 along with hired labor cost/worker rising 7.3% to \$27,025. Even with these increases, hired labor as a percent of milk sales dropped 9.7%, reflecting the high milk prices realized in 2014.

Grain and concentrate purchased as a percent of milk sales decreased 13.3% from 30% to 26%. Grain and concentrate per hundredweight of milk increased from \$6.32 per hundredweight to \$6.69 per hundredweight or 5.9%. Dairy feed and crop expense/cwt increased 6.5% in response to increased purchased feed expenses along with increase cost of crop inputs. Total farm operating expenses per hundredweight increased 6.0% from \$19.22 to \$20.38. Interest costs dropped by 1.9%. Milk marketing costs increased by 1.8% a portion of which can be attributed to a full year of CWT Program being at 4 cents a cwt.. The operating cost of producing milk per hundredweight rose 8.1% from \$15.72 to \$17.00 as costs of feed, supplies, machinery repairs, breeding and vet expenses, bedding and other livestock expenses continue to go up.

Farm capital per cow increased 6.1 percent to \$14,531 and machinery and equipment per cow was up 5.9% with new investments for replacement of equipment, small increases in land values and cattle values, and retained earnings. While the average investment per cow did increase, the large increase in revenue from higher milk and beef prices resulted in an increase of 8.1% in the asset turnover ratio.

Gross sales per hundredweight rose from \$21.27 to \$25.45 per hundredweight, or 19.6%. Gross milk sales per cow rose 19.2% from \$4,251 per cow to \$5,066 due to higher milk prices and fairly stable milk per cow. At the same time, beef prices rose continually and that helped generate more cash flow. Dairy cattle sales per cow went from \$323 to \$341, an increase of 5.6%. Calf sales per cow increased a whopping 256% from \$25 to \$89. A decrease in government receipts from \$0.60 per hundredweight to \$0.03 per hundredweight did not have much affect on income due to those large increases in cow and calf prices.

Net farm income without appreciation rose from \$59,875 to \$101,464, a 69.5% increase. Net farm income with appreciation also saw a large rise of 57.5% to \$110,284. Labor and management income per operator jumped from \$10,439 to \$37,056 or 255%. Another year with a positive rate of return on equity of 5.8% (2.0% in 2013) marks the fourth year of positive returns (although it is noted that 2012, while positive, was a very low return rate). The rate of return on all capital with appreciation was 5.3%. Farm net worth continues to rise (8.9%) due to an increase in large part due to retained earnings, with contribution from increases in land values, livestock value and other farm investments. Farm debt per cow saw a small drop of 0.1% from \$2,995 to \$2,992 as farmers were able to make capital investments out of cash flow and avoid borrowing for all of their capital needs.

2014 was a prosperous year after the recovery year in 2013. Positive returns have been the trend in recent years with the last year of negative returns on small herd farms in 2010. Higher milk prices and decent feed prices made for profitable margins, despite the increased cost of inputs as well as labor.

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. Comparing your business' performance with average data from these DFBS dairy farms can help you establish goals for your business. It is equally important 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 33 Small Herd Dairy Farms, 2013 & 2014

| Selected Factors | Average of 33 Farms | | Percent Change |
|--|---------------------|-----------|----------------|
| | 2013 | 2014 | |
| <u>Size of Business</u> | | | |
| Average number of cows | 77 | 77 | 0.0 |
| Average number of heifers | 62 | 66 | 6.5 |
| Milk sold, pounds | 1,542,253 | 1,540,830 | -0.1 |
| Worker equivalent | 2.7 | 2.8 | 3.7 |
| Total tillable acres | 273 | 281 | 2.9 |
| <u>Rates of Production</u> | | | |
| Milk sold per cow, pounds | 19,982 | 19,909 | -0.4 |
| Hay DM per acre, tons | 2.1 | 2.2 | 4.8 |
| Corn silage per acre, tons | 16.1 | 18.1 | 12.4 |
| <u>Labor Efficiency & Costs</u> | | | |
| Cows per worker | 29 | 28 | -3.5 |
| Milk sold per worker, pounds | 573,328 | 560,302 | -2.3 |
| Hired labor cost per hundredweight | \$1.52 | \$1.65 | 8.6 |
| Hired labor cost per worker | \$25,180 | \$27,025 | 7.3 |
| Hired labor cost as % of milk sales | 7.2% | 6.5% | -9.7 |
| <u>Cost Control</u> | | | |
| Grain & concentrate purchased as % of milk sales | 30% | 26% | -13.3 |
| Grain & concentrate per hundredweight milk | \$6.32 | \$6.69 | 5.9 |
| Dairy feed & crop expense per cwt. milk | \$8.27 | \$8.81 | 6.5 |
| Labor & machinery costs per cow | \$1,943 | \$2,158 | 11.1 |
| Total farm operating expenses per cwt. sold | \$19.22 | \$20.38 | 6.0 |
| Interest costs per hundredweight milk | \$0.52 | \$0.51 | -1.9 |
| Milk marketing costs per cwt. milk sold | \$1.10 | \$1.12 | 1.8 |
| Operating cost of producing cwt. of milk | \$15.72 | \$17.00 | 8.1 |
| <u>Capital Efficiency</u> (average for the year) | | | |
| Farm capital per cow* | \$13,694 | \$14,531 | 6.1 |
| Machinery & equipment per cow | \$2,948 | \$3,123 | 5.9 |
| Asset turnover ratio* | 0.37 | 0.40 | 8.1 |
| <u>Income Generation</u> | | | |
| Gross milk sales per cow | \$4,251 | \$5,066 | 19.2 |
| Gross milk sales per hundredweight | \$21.27 | \$25.45 | 19.6 |
| Net milk sales per hundredweight | \$20.17 | \$24.32 | 20.6 |
| Dairy cattle sales per cow | \$323 | \$341 | 5.6 |
| Dairy calf sales per cow | \$25 | \$89 | 256.0 |
| Government receipts per hundredweight | \$0.60 | \$0.03 | -95.0 |
| <u>Profitability</u> | | | |
| Net farm income without appreciation | \$59,875 | \$101,464 | 69.5 |
| Net farm income with appreciation | \$70,045 | \$110,284 | 57.5 |
| Labor & management income per oper./manager | \$10,439 | \$37,056 | 255.0 |
| Rate of return on equity capital with appreciation | 2.0% | 5.8% | 190.0 |
| Rate of return on all capital with appreciation | 2.4% | 5.3% | 120.8 |
| <u>Financial Summary</u> | | | |
| Farm net worth, end year | \$817,408 | \$890,483 | 8.9 |
| Debt to asset ratio | 0.22 | 0.21 | -4.6 |
| Farm debt per cow | \$2,995 | \$2,992 | -0.1 |

*Rented farms are excluded from these factors.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning 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 dairy farmers. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS

44 Small Herd Dairy Farms, 2014

| Type of Farm | Number | Milking System | Number |
|---------------------------------|--------|------------------------|---------|
| Dairy | 44 | Bucket & carry | 0 |
| Part-time dairy | 0 | Dumping station | 0 |
| Dairy cash-crop | 0 | Pipeline | 30 |
| Certified organic milk producer | 0 | Herringbone parlor | 7 |
| Rotational grazing farms | 5 | Other parlor | 7 |
| Type of Ownership | Number | Production Records | Number |
| Owner | 38 | Testing service | 33 |
| Renter | 6 | On-farm system | 3 |
| | | Other | 0 |
| | | None | 8 |
| Type of Business | Number | Business Record System | Number |
| Sole Proprietorship | 35 | Account Book | 14 |
| Partnership | 5 | Accounting Service | 6 |
| LLC | 4 | On-farm computer | 23 |
| | | Other | 1 |
| Type of Barn | Number | Breed of Herd | Percent |
| Stanchion or Tie-Stall | 29 | Holstein | 87 |
| Freestall | 14 | Jersey | 6 |
| Combination | 1 | Other | 7 |
| Milking Frequency | Number | | |
| 2 times per day | 40 | | |
| 3 times per day | 3 | | |
| Other | 1 | | |

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 2014.

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.

Change in prepaid expenses (noted 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.

CASH AND ACCRUAL FARM EXPENSES

44 Small Herd Dairy Farms, 2014

| Expense Item | Cash Paid | Change in Inventory | | | Change in Accounts Payable | = | Accrual Expenses |
|---------------------------------------|--------------|------------------------|-------------------------|----|----------------------------------|----|---------------------|
| | | - | or Prepaid Ex- pense | + | | | |
| <u>Hired Labor</u> | \$ 27,046 | \$ | 0 | << | \$ 87 | \$ | 27,133 |
| <u>Feed</u> | | | | | | | |
| Dairy grain & concentrate | 117,673 | | 4,396 | | -1,853 | | 111,424 |
| Dairy roughage | 10,717 | | 703 | | -64 | | 9,949 |
| Nondairy | 166 | | 0 | | 0 | | 166 |
| Professional nutritional services | 1 | | 0 | << | 0 | | 1 |
| <u>Machinery</u> | | | | | | | |
| Machinery hire, rent & lease | 7,887 | | 0 | << | -699 | | 7,188 |
| Machinery repairs & farm vehicle exp. | 26,432 | | 213 | | -329 | | 25,890 |
| Fuel, oil & grease | 19,320 | | 98 | | -29 | | 19,194 |
| <u>Livestock</u> | | | | | | | |
| Replacement livestock | 2,898 | | 0 | << | -45 | | 2,852 |
| Breeding | 5,679 | | 339 | | 85 | | 5,426 |
| Veterinary & medicine | 9,050 | | 402 | | -8 | | 8,640 |
| Milk marketing | 18,552 | | 0 | << | -85 | | 18,467 |
| Bedding | 4,936 | | 29 | | 0 | | 4,907 |
| Milking supplies | 9,796 | | 77 | | 60 | | 9,779 |
| Cattle lease & rent | 110 | | 0 | << | 0 | | 110 |
| Custom boarding | 550 | | 0 | << | 0 | | 550 |
| bST | 984 | | 41 | | 24 | | 967 |
| Livestock professional fees | 2,029 | | 197 | << | 0 | | 1,832 |
| Other livestock expense | 5,355 | | 77 | | -195 | | 5,083 |
| <u>Crops</u> | | | | | | | |
| Fertilizer & lime | 14,973 | | 1,075 | | -335 | | 13,563 |
| Seeds & plants | 11,506 | | 2,695 | | -174 | | 8,637 |
| Spray, other crop expense | 5,449 | | 407 | | 0 | | 5,042 |
| Crop professional fees | 109 | | 0 | << | 0 | | 109 |
| <u>Real Estate</u> | | | | | | | |
| Land, building & fence repair | 6,380 | | 33 | | 286 | | 6,634 |
| Taxes | 8,569 | | 0 | << | -352 | | 8,217 |
| Rent & lease | 4,480 | | 0 | << | 91 | | 4,571 |
| <u>Other</u> | | | | | | | |
| Insurance | 6,969 | | 325 | << | 0 | | 6,644 |
| Utilities (farm share) | 11,690 | | 0 | << | -9 | | 11,681 |
| Interest paid | 8,391 | | 0 | << | 62 | | 8,454 |
| Other professional fees | 1,663 | | 0 | << | 58 | | 1,721 |
| Miscellaneous | 2,044 | | -18 | | 0 | | 2,062 |
| Total Operating | \$351,407 | | \$11,088 | | \$-3,426 | | \$336,893 |
| Expansion livestock | 4,458 | | 0 | << | 0 | | 4,458 |
| Extraordinary expense | 724 | | 0 | << | 0 | | 724 |
| Machinery depreciation | | | | | | | 22,826 |
| Building depreciation | | | | | | | 3,616 |
| TOTAL ACCRUAL EXPENSES | | | | | | | \$368,517 |

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 2014 but not paid for. A decrease is subtracted because it represents payment for resources used before 2014.

Accrual expenses are an estimate of the costs of inputs, except operator/family labor and equity capital, 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

44 Small Herd Dairy Farms, 2014

| Receipt Item | Cash Receipts | + | Change in Inventory | + | Change in Accounts Receivable | = | Accrual Receipts |
|--------------------------------|---------------|-----|---------------------|---|-------------------------------|-----|------------------|
| Milk sales | \$ 143,150 | | | | \$ 1,532 | | \$ 414,682 |
| Dairy cattle | 21,639 | | \$ 11,438 | | \$ 114 | | 33,190 |
| Dairy calves | 4,735 | | 1,403 | | 0 | | 6,138 |
| Other livestock | 483 | | 116 | | 9 | | 608 |
| Crops | 4,762 | | 5,995 | | 400 | | 11,158 |
| Government receipts | 1,314 | | 0 * | | -801 | | 513 |
| Custom machine work | 1,534 | | | | 216 | | 1,750 |
| Gas tax refund | 52 | | | | 0 | | 52 |
| Other | <u>7,658</u> | | | | <u>-5</u> | | 7,653 |
| Less nonfarm noncash capital** | | (-) | <u>0</u> ** | | | (-) | <u>0</u> |
| Total Receipts | \$ 455,327 | | \$ 18,952 | | \$ 1,465 | | \$ 475,745 |

*Change in advanced government receipts.

**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 2014 for the 2015 crop year in excess of funds earned for 2014. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2014 but received in 2013.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 2015 for milk produced in December 2014 compared to January 2014 payments for milk produced in 2013 are included as a change in accounts receivable in determining accrual milk sales.

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* 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.

The return to any individual resource must be viewed as an estimate because the cost of other family resources must be approximated to calculate returns to the selected resource. For example, the costs of operator and family labor and management must be approximated to calculate the returns to equity capital.

* 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.

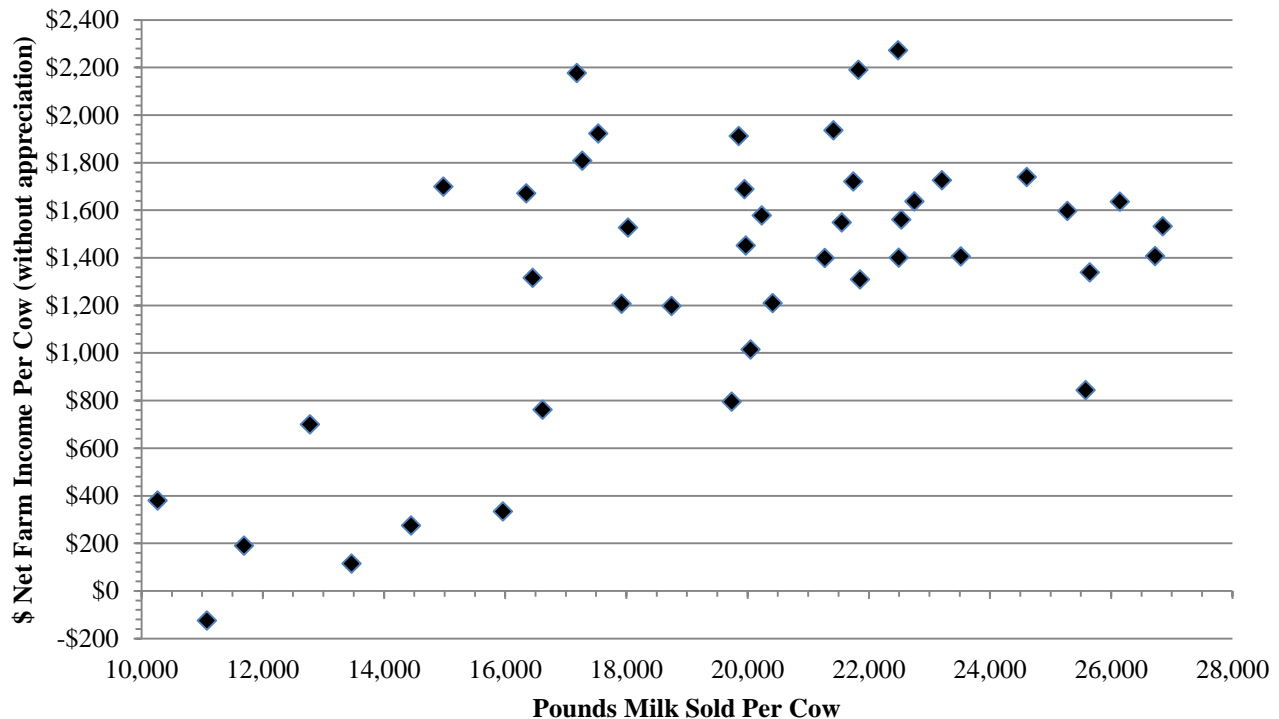
NET FARM INCOME
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | Top 50% Farms* | |
|--|------------------|----------|----------------|---------|
| | Total | Per Cow | Total | Per Cow |
| Total accrual receipts | \$ 475,745 | | \$ 590,305 | |
| Appreciation: Livestock | 1,940 | | 914 | |
| Machinery | 6,679 | | 8,909 | |
| Real Estate | -133 | | -4,354 | |
| Other Stock & Certificates | 668 | | -137 | |
| Total Including Appreciation | \$ 484,899 | | \$ 595,636 | |
| Total accrual expenses | - 368,517 | | - 441,919 | |
| Net Farm Income (with appreciation) | \$ 116,382 | \$ 1,445 | \$ 153,718 | \$1,674 |
| Net Farm Income (without appreciation) | \$ 107,227 | \$ 1,331 | \$ 148,386 | \$1,616 |

*Top 50% of small herd farms by rate of return on all assets without appreciation.

The chart below shows the relationship between net farm income per cow (without appreciation) and pounds of milk sold per cow. Higher net 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
44 Small Herd Dairy Farms, 2014



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 unpaid family labor and the opportunity cost of 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.

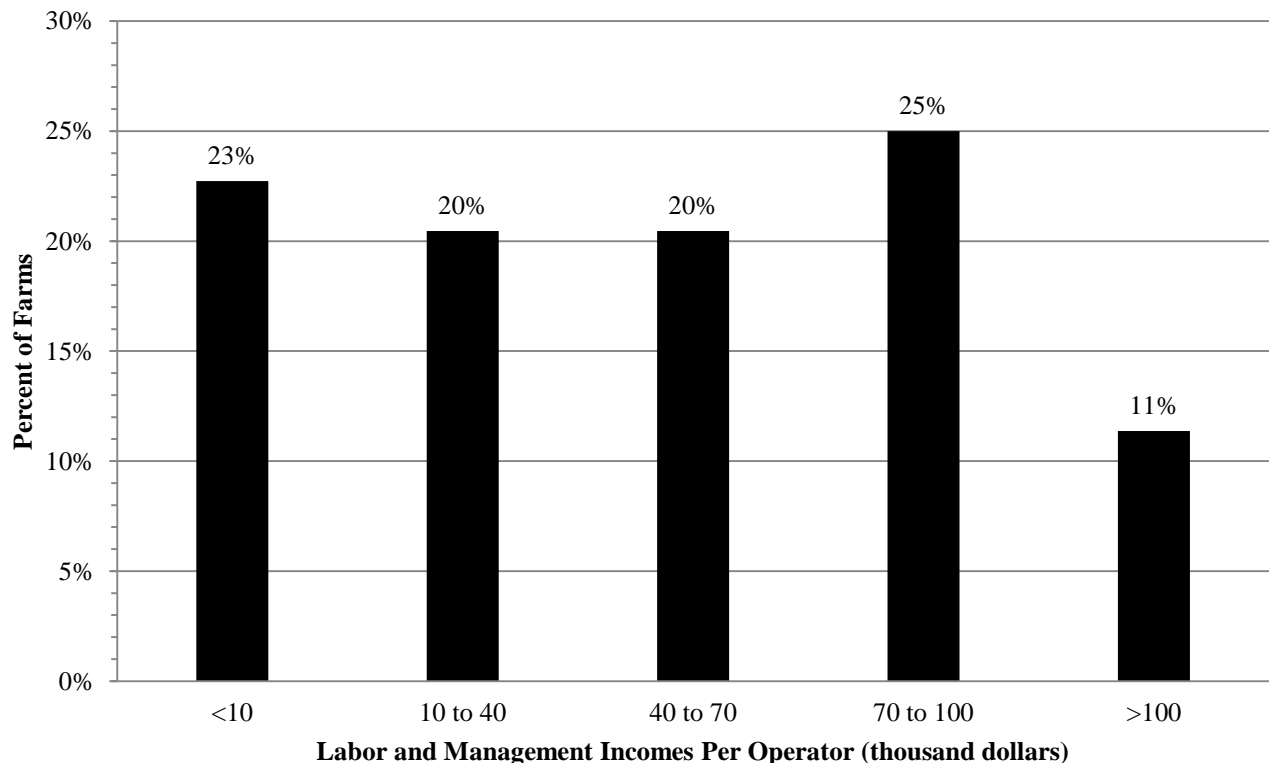
LABOR AND MANAGEMENT INCOME

44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | Top 50% Farms |
|---|------------------|-----------------|
| Net farm income without appreciation | \$ 107,227 | \$ 148,386 |
| Family labor unpaid @ \$2,600 per month | - 11,960 | - 10,885 |
| Interest on \$830,676 average equity capital @ 5% real rate ((\$823,276 average equity capital for top 50% farms)) | - <u>41,534</u> | - <u>41,164</u> |
| Labor & Management Income per farm (1.27 operators per farm) (1.15 operators per farm for top 50% farms) | \$ 53,734 | \$ 96,338 |
| Labor & Management Income per Operator/Manager | \$ 42,310 | \$ 83,772 |

Labor and management income per operator averaged \$42,310 on these 44 farms in 2014. The range in labor and management income per operator was from less than \$-98,000 to more than \$188,000. Returns to labor and management were less than \$40,000 on 43 percent of the farms. Labor and management incomes per operator were between \$40,000 and \$100,000 on 45 percent of the farms while 11 percent had labor and management incomes per operator greater than \$100,000.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR 44 Small Herd Dairy Farms, 2014



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. Rate of return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets. 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
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | Top 50% Farms |
|---|------------------|-----------------|
| Net farm income with appreciation | \$ 116,382 | \$ 153,718 |
| Family labor unpaid @ \$2,600 per month | - 11,960 | - 10,885 |
| Value of operators' labor & management | <u>- 50,821</u> | <u>- 46,136</u> |
| Return on equity capital with appreciation | \$ 53,601 | \$ 96,697 |
| Interest paid | <u>+ 8,454</u> | <u>+ 8,696</u> |
| Return on total capital with appreciation | \$ 62,055 | \$ 105,392 |
| | | |
| Return on equity capital without appreciation | \$ 44,447 | \$ 91,365 |
| Return on total capital without appreciation | \$ 52,900 | \$ 100,061 |
| Rate of return on average equity capital: | | |
| with appreciation | 6.5% | 11.8% |
| without appreciation | 5.4% | 11.1% |
| Rate of return on average total capital: | | |
| with appreciation | 5.8% | 9.8% |
| without appreciation | 4.9% | 9.3% |
| | | |
| Net farm income from operations ratio | 0.23 | 0.25 |

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 2014, lease payments were discounted by 7 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 2014 that are for participation in the 2015 program are the end year balance and payments received in 2013 for participation in the 2014 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.

2014 FARM BUSINESS & NONFARM BALANCE SHEET

44 Small Herd Dairy Farms, 2014

| Farm Assets | Jan. 1 | Dec. 31 | Farm Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|----------------------------------|-------------|-------------|---------------------------------|------------|------------|
| <u>Current</u> | | | <u>Current</u> | | |
| Farm cash, checking & savings | \$ 11,952 | \$ 13,595 | Accounts payable | \$ 12,567 | \$ 9,141 |
| Accounts receivable | 29,311 | 30,777 | Operating debt | 7,796 | 9,712 |
| Prepaid expenses | 43 | 564 | Short Term | 2,448 | 5,306 |
| Feed & supplies | 90,838 | 107,400 | Advanced govt. receipts | 0 | 0 |
| | | | Current Portion: | | |
| | | | Intermediate | 20,168 | 23,569 |
| | | | Long Term | 4,513 | 6,737 |
| Total Current | \$ 132,144 | \$ 152,336 | Total Current | \$ 47,492 | \$ 54,466 |
| <u>Intermediate</u> | | | <u>Intermediate</u> | | |
| Dairy cows: | | | Structured debt | | |
| owned | \$ 115,632 | \$ 124,453 | 1-10 years | \$ 117,402 | \$ 84,296 |
| leased | 0 | 0 | Financial lease | | |
| Heifers | 62,044 | 67,992 | (cattle/machinery) | 0 | 0 |
| Bulls & other livestock | 3,670 | 3,797 | Farm Credit stock | 398 | 420 |
| Mach. & equip. owned | 223,117 | 262,480 | Total Intermediate | \$ 117,800 | \$ 84,717 |
| Mach. & equip. leased | 0 | 0 | | | |
| Farm Credit stock | 398 | 420 | | | |
| Other stock/certificate | 19,822 | 21,048 | | | |
| Total Intermediate | \$ 424,683 | \$ 480,191 | | | |
| <u>Long Term</u> | | | <u>Long Term</u> | | |
| Land & buildings: | | | Structured debt | | |
| owned | \$ 461,472 | \$ 499,733 | >10 years | \$ 90,740 | \$ 122,904 |
| leased | 0 | 0 | Financial lease | | |
| Total Long Term | \$ 461,472 | \$ 499,733 | (structures) | 0 | 0 |
| | | | Total Long Term | \$ 90,740 | \$ 122,904 |
| | | | | | |
| Total Farm Assets | \$1,018,299 | \$1,132,260 | Total Farm Liabilities | \$ 256,032 | \$ 262,087 |
| | | | FARM NET WORTH | \$ 762,267 | \$ 870,172 |

Nonfarm Assets, Liabilities & Net Worth (Average of 19 farms reporting)

| Assets | Jan. 1 | Dec. 31 | Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|--------------------------------------|-----------|-----------|-------------------------|-----------|-----------|
| Personal cash, checking & savings | \$ 12,848 | \$ 28,632 | Nonfarm Liabilities | \$ 4,858 | \$ 2,796 |
| Cash value life insurance | 15,310 | 15,791 | | | |
| Nonfarm real estate | 10,053 | 6,632 | | | |
| Auto (personal share) | 7,932 | 9,184 | | | |
| Stocks & bonds | 56,074 | 59,369 | | | |
| Household furnishings | 7,558 | 7,558 | | | |
| All other nonfarm assets | 1,895 | 1,895 | | | |
| Total Nonfarm Assets | \$111,669 | \$129,061 | NONFARM NET WORTH | \$106,810 | \$126,265 |

| Farm & Nonfarm Assets, Liabilities, and Net Worth* | Jan. 1 | Dec. 31 |
|--|--------------|--------------|
| Total Assets | \$ 1,129,968 | \$ 1,261,321 |
| Total Liabilities | 260,890 | 264,883 |
| TOTAL FARM & NONFARM NET WORTH | \$ 869,078 | \$ 996,438 |

*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 dollar 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 of less than 1.5 or that has been falling warrants additional evaluation. The amount of working capital that is adequate must be related to the size of the farm business.

BALANCE SHEET ANALYSIS
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | Top 50% Farm | |
|---|------------------|------------------------------------|----------------|------------------------------------|
| <u>Financial Ratios - Farm:</u> | | | | |
| Percent equity | | 77% | | 76% |
| Debt/asset ratio: total | | 0.23 | | 0.24 |
| long-term | | 0.25 | | 0.28 |
| intermediate/current | | 0.22 | | 0.21 |
| Leverage ratio | | 0.30 | | 0.31 |
| Current ratio | | 2.80 | | 2.79 |
| Working capital | \$97,869 | As % of total Expenses: 27% | \$116,077 | 26% |
| <u>Farm Debt Analysis:</u> | | | | |
| Accounts payable as % of total debt | | 3% | | 2% |
| Long-term liabilities as a % of total debt | | 47% | | 45% |
| Current & intermediate liabilities as a % of total debt | | 53% | | 55% |
| Cost of term debt (weighted average) | | 3.2% | | 3.3% |
| <u>Farm Debt Levels:</u> | | | | |
| | <u>Per Cow</u> | <u>Per Tillable Acre Owned</u> | <u>Per Cow</u> | <u>Per Tillable Acre Owned</u> |
| Total farm debt | \$3,105 | \$1,983 | \$2,895 | \$2,198 |
| Long-term debt | 1,456 | 930 | 1,312 | 996 |
| Intermediate & long term | 2,460 | 1,571 | 2,206 | 1,675 |
| Intermediate & current debt | 1,649 | 1,053 | 1,583 | 1,202 |

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
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | |
|-------------------------|--------------------|----------------------------------|
| | <u>Real Estate</u> | <u>Machinery & Equipment</u> |
| Value beginning of year | \$ 461,472 | \$ 223,117 |
| Purchases | \$ 42,563* | \$ 57,788 |
| Gift & inheritance | + 5,682 | + 9 |
| Lost capital | - 6,236 | |
| Sales | - 0 | - 2,287 |
| Depreciation | - 3,616 | - 22,826 |
| Net investment | = 38,393 | = 32,684 |
| Appreciation | + -133 | + 6,679 |
| Value end of year | \$ 499,733 | \$ 262,480 |

*\$15,941 land and \$26,622 buildings 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)

44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | Top 50% Farms |
|--|------------------|-------------------|
| Beginning of year farm net worth | \$791,179 | \$769,451 |
| Net farm income without appreciation | \$ 107,227 | \$ 148,386 |
| +Nonfarm cash income | + 8,698 | + 10,311 |
| -Personal withdrawals & family expenditures excluding nonfarm borrowings | <u>- 50,163</u> | <u>- 48,898</u> |
| RETAINED EARNINGS | + \$ 65,763 | + \$ 109,799 |
| Nonfarm noncash transfers to farm | \$ 5,691 | \$ 18 |
| +Cash used in business from nonfarm capital | + 4,348 | + 4,313 |
| -Note or mortgage from farm real estate sold (nonfarm) | <u>- 0</u> | <u>- 0</u> |
| CONTRIBUTED/WITHDRAWN CAPITAL | + \$ 10,038 | + \$ 4,331 |
| Appreciation | \$ 9,154 | \$ 5,331 |
| -Lost capital | <u>- 6,236</u> | <u>- 10,472</u> |
| CHANGE IN VALUATION EQUITY | + \$ 2,918 | +\$ -5,141 |
| IMBALANCE/ERROR | <u>- \$ -274</u> | <u>- \$ 1,338</u> |
| End of year net worth* | = \$ 870,172 | = \$ 877,102 |
| <hr/> | | |
| <u>Change in Net Worth</u> | | |
| Without appreciation | \$69,839 | \$102,320 |
| With appreciation | \$78,994 | \$107,651 |

*May not add to total 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.

ANNUAL CASH FLOW STATEMENT

44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | |
|---|------------------|-------------|
| <u>Cash Flow from Operating Activities</u> | | |
| Cash farm receipts | \$ 455,327 | |
| - Cash farm expenses | 351,407 | |
| - Extraordinary expense | 724 | |
| = Net cash farm income | | \$ 103,196 |
| Personal withdrawals & family expenses including nonfarm debt payments | \$ 49,441 | |
| - Nonfarm income | 8,698 | |
| - Net cash withdrawals from the farm | | \$ 40,742 |
| = Net Provided by Operating Activities | | \$ 62,453 |
| <u>Cash Flow From Investing Activities</u> | | |
| Sale of assets: machinery | \$ 2,287 | |
| + real estate | 0 | |
| + other stock & cert. | 202 | |
| = Total asset sales | | \$ 2,490 |
| Capital purchases: expansion livestock | \$ 4,458 | |
| + machinery | 57,788 | |
| + real estate | 42,563 | |
| + other stock & cert. | 760 | |
| - Total invested in farm assets | | \$ 105,569 |
| = Net Provided by Investment Activities | | \$ -103,079 |
| <u>Cash Flow From Financing Activities</u> | | |
| Money borrowed (intermediate & long term) | \$ 68,903 | |
| + Money borrowed (short term) | 3,167 | |
| + Increase in operating debt | 1,916 | |
| + Cash from nonfarm capital used in business | 4,348 | |
| + Money borrowed - nonfarm | -722 | |
| = Cash inflow from financing | | \$ 77,611 |
| Principal payments (intermediate & long term) | \$ 35,307 | |
| + Principal payments (short term) | 309 | |
| + Decrease in operating debt | 0 | |
| - Cash outflow for financing | | \$ 35,616 |
| = Net Provided by Financing Activities | | \$ 41,995 |
| <u>Cash Flow From Reserves</u> | | |
| Beginning farm cash, checking & savings | | \$ 11,952 |
| - Ending farm cash, checking & savings | | 13,595 |
| = Net Provided from Reserves | | \$ -1,643 |
| Imbalance (error) | | \$ -274 |

ANNUAL CASH FLOW STATEMENT
Top 50% Small Herd Dairy Farms, 2014

| Item | Top 50% Farms | |
|---|---------------|-------------------|
| <u>Cash Flow from Operating Activities</u> | | |
| Cash farm receipts | \$ 561,313 | |
| - Cash farm expenses | 431,610 | |
| - Extraordinary expense | <u>800</u> | |
| = Net cash farm income | | \$ 128,903 |
| | | |
| Personal withdrawals & family expenses including nonfarm debt payments | \$ 48,942 | |
| - Nonfarm income | <u>10,311</u> | |
| - Net cash withdrawals from the farm | | <u>\$ 38,631</u> |
| = Net Provided by Operating Activities | | \$ 90,272 |
| <u>Cash Flow From Investing Activities</u> | | |
| Sale of assets: machinery | \$ 1,732 | |
| + real estate | 0 | |
| + other stock & cert. | <u>403</u> | |
| = Total asset sales | | \$ 2,135 |
| Capital purchases: expansion livestock | \$ 817 | |
| + machinery | 87,352 | |
| + real estate | 42,814 | |
| + other stock & cert. | <u>1,287</u> | |
| - Total invested in farm assets | | <u>\$ 132,270</u> |
| = Net Provided by Investment Activities | | \$ -130,135 |
| <u>Cash Flow From Financing Activities</u> | | |
| Money borrowed (intermediate & long term) | \$ 78,239 | |
| + Money borrowed (short term) | 7,682 | |
| + Increase in operating debt | 3,694 | |
| + Cash from nonfarm capital used in business | 4,313 | |
| + Money borrowed - nonfarm | <u>44</u> | |
| = Cash inflow from financing | | \$ 93,972 |
| | | |
| Principal payments (intermediate & long term) | \$ 48,380 | |
| + Principal payments (short term) | 617 | |
| + Decrease in operating debt | <u>0</u> | |
| - Cash outflow for financing | | <u>\$ 48,998</u> |
| = Net Provided by Financing Activities | | \$ 44,975 |
| <u>Cash Flow From Reserves</u> | | |
| Beginning farm cash, checking & savings | | \$ 14,031 |
| - Ending farm cash, checking & savings | | <u>17,805</u> |
| = Net Provided from Reserves | | \$ -3,773 |
| <u>Imbalance (error)</u> | | |
| | | \$ 1,338 |

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 2015. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 2015 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Small Herd Dairy Farms, 2013 & 2014

| Debt Payments | Same 33 Dairy Farms | | | Same 15 Top 50% Farms | | |
|-------------------------------------|---------------------|-----------|-----------------|-----------------------|-----------|-----------------|
| | 2014 Payments | | Planned 2015 | 2014 Payments | | Planned 2015 |
| | Planned | Made | | Planned | Made | |
| Long-term | \$ 8,130 | \$ 9,907 | \$ 10,164 | \$ 9,369 | \$ 11,660 | \$ 12,596 |
| Intermediate-term | 24,354 | 28,005 | 23,522 | 29,922 | 38,064 | 30,168 |
| Short-term | 1,591 | 100 | 2,003 | 300 | 219 | 4,406 |
| Operating (net reduction) | 11 | 1,118 | 30 | 0 | 1,876 | 0 |
| Accounts payable (net reduction) | 0 | 3,672 | 0 | 0 | 4,110 | 0 |
| Total | \$ 34,086 | \$ 42,801 | \$ 35,719 | \$ 39,591 | \$ 55,929 | \$ 47,170 |
| Per cow | \$ 440 | \$ 553 | | \$ 420 | \$ 594 | |
| Per cwt. 2014 milk | \$ 2.21 | \$ 2.78 | | \$ 1.89 | \$ 2.67 | |
| Percent of total 2014 receipts | 8% | 10% | | 7% | 9% | |
| Percent of 2014 milk receipts | 9% | 11% | | 7% | 10% | |

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 2014 (as of December 31, 2013) that could have been made with the amount available for debt service in 2014. Farmers who did not participate in DFBS in 2013 have their 2014 cash flow coverage ratio based on planned debt payments for 2015.

COVERAGE RATIOS

Same 33 Small Herd Dairy Farms, 2013 & 2014

| Item | Average | Item | Average |
|---|-----------|---|-----------|
| <u>Cash Flow Coverage Ratio</u> | | <u>Debt Coverage Ratio</u> | |
| Cash farm receipts | \$434,721 | Net farm income (without appreciation) | \$101,464 |
| - Cash farm expenses | 326,690 | + Depreciation | 28,089 |
| + Interest paid (cash) | 7,885 | + Interest paid (accrual) | 7,885 |
| - Net personal withdrawals from farm* | 42,259 | - Net personal withdrawals from farm* | 42,259 |
| (A) = Amount Available for Debt Service | \$ 73,657 | (A') = Repayment Capacity | \$95,179 |
| (B) = Debt Payments Planned for 2014 (as of December 31, 2013) | \$ 34,086 | (B) = Debt Payments Planned for 2014 (as of December 31, 2013) | \$34,086 |
| (A/B)= Cash Flow Coverage Ratio for 2014 | 2.16 | (A'/B)= Debt Coverage Ratio for 2014 | 2.79 |
| ----- | | | |
| Same 15 Top 50% Dairy Farms, 2013 & 2014 | | | |
| (A) = Amount Available for Debt Service | \$109,270 | (A') = Repayment Capacity | \$150,539 |
| (B) = Debt Payments Planned for 2014 | \$39,591 | (B) = Debt Payments Planned for 2014 | \$39,591 |
| (A/B)= Cash Flow Coverage Ratio for 2014 | 2.76 | (A'/B)= Debt Coverage Ratio for 2014 | 3.80 |

*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the cash flow coverage ratio will be incorrect.

ANNUAL CASH FLOW WORKSHEET

44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | |
|--|------------------|----------------|------------------|
| | Per Cow | Per Cwt. | Total |
| Number cows and cwt. milk | 81 | 16,208 | |
| <u>Accrual Operating Receipts</u> | | | |
| Milk | \$5,148 | \$25.59 | \$414,682 |
| Dairy cattle | 412 | 2.05 | 33,190 |
| Dairy calves | 76 | 0.38 | 6,138 |
| Other livestock | 8 | 0.04 | 608 |
| Crops | 139 | 0.69 | 11,158 |
| Miscellaneous receipts | <u>124</u> | <u>0.62</u> | <u>9,968</u> |
| Total | \$5,906 | \$29.35 | \$475,745 |
| <u>Accrual Operating Expenses</u> | | | |
| Hired labor | \$ 337 | \$ 1.67 | \$ 27,133 |
| Dairy grain & concentrate | 1,383 | 6.87 | 111,424 |
| Dairy roughage | 124 | 0.61 | 9,949 |
| Nondairy feed | 2 | 0.01 | 166 |
| Professional nutritional services | 0 | 0.00 | 1 |
| Machinery hire/rent/lease | 89 | 0.44 | 7,188 |
| Machinery repair & farm vehicle expense | 321 | 1.60 | 25,890 |
| Fuel, oil & grease | 238 | 1.18 | 19,194 |
| Replacement livestock | 35 | 0.18 | 2,852 |
| Breeding | 67 | 0.33 | 5,426 |
| Veterinary & medicine | 107 | 0.53 | 8,640 |
| Milk marketing | 229 | 1.14 | 18,467 |
| Bedding | 61 | 0.30 | 4,907 |
| Milking supplies | 121 | 0.60 | 9,779 |
| Cattle lease | 1 | 0.01 | 110 |
| Custom boarding | 7 | 0.03 | 550 |
| bST expense | 12 | 0.06 | 967 |
| Livestock professional fees | 23 | 0.11 | 1,832 |
| Other livestock expense | 63 | 0.31 | 5,083 |
| Fertilizer & lime | 168 | 0.84 | 13,563 |
| Seeds & plants | 107 | 0.53 | 8,637 |
| Spray & other crop expenses | 63 | 0.31 | 5,042 |
| Crop professional fees | 1 | 0.01 | 109 |
| Land, building, fence repair | 82 | 0.41 | 6,634 |
| Taxes | 102 | 0.51 | 8,217 |
| Real estate rent/lease | 57 | 0.28 | 4,571 |
| Insurance | 82 | 0.41 | 6,644 |
| Utilities | 145 | 0.72 | 11,681 |
| Other professional fees | 21 | 0.11 | 1,721 |
| Miscellaneous | <u>26</u> | <u>0.13</u> | <u>2,062</u> |
| Total Less Interest Paid | \$4,077 | \$20.26 | \$328,440 |
| <u>Net Accrual Operating Income (without interest paid)</u> | 1,829 | 9.09 | 147,305 |
| - Change in livestock/crop inventory* | 235 | 1.17 | 18,952 |
| - Change in accounts receivable | 18 | 0.09 | 1,465 |
| - Change in feed/supply inventory** | 138 | 0.68 | 11,088 |
| + Change in accts. payable*** | <u>-43</u> | <u>-0.22</u> | <u>-3,488</u> |
| NET CASH FLOW | <u>\$1,394</u> | <u>\$ 6.93</u> | <u>\$112,311</u> |
| - Net personal withdrawals from farm (see footnote on p. 15) | <u>501</u> | <u>2.49</u> | <u>40,378</u> |
| Available for Farm Debt Payments & Investments | \$ 893 | \$ 4.44 | \$ 71,933 |
| - Farm debt payments | <u>637</u> | <u>3.16</u> | <u>51,291</u> |
| Available for Farm Investment | \$ 256 | \$ 1.27 | \$ 20,642 |
| - Capital purchases: cattle, machinery & improvements | <u>1,311</u> | <u>6.51</u> | <u>105,569</u> |
| Additional Capital Needed | \$1,054 | \$ 5.24 | \$ 84,927 |

*Includes change in advance government receipts. **Includes change in prepaid expenses.

***Excludes change in interest account payable.

ANNUAL CASH FLOW WORKSHEET

Top 50% Small Herd Dairy Farms, 2014

| Item | Average Top 50% Farms | | |
|---|-----------------------|--------------|----------------|
| | Per Cow | Per Cwt. | Total |
| Number of cows or cwt. milk | 92 | 20,035 | |
| <u>Accrual Operating Receipts</u> | | | |
| Milk | \$5,628 | \$25.80 | \$516,803 |
| Dairy cattle | 379 | 1.74 | 34,833 |
| Dairy calves | 84 | 0.39 | 7,736 |
| Other livestock | 5 | 0.02 | 445 |
| Crops | 180 | 0.83 | 16,572 |
| Miscellaneous receipts | <u>152</u> | <u>0.69</u> | <u>13,916</u> |
| Total | \$6,429 | \$29.46 | \$590,305 |
| <u>Accrual Operating Expenses</u> | | | |
| Hired labor | \$ 389 | \$ 1.78 | \$ 35,741 |
| Dairy grain & concentrate | 1,542 | 7.07 | 141,612 |
| Dairy roughage | 134 | 0.62 | 12,330 |
| Nondairy feed | 0 | 0.00 | 0 |
| Professional nutritional services | 0 | 0.00 | 2 |
| Machinery hire/rent/lease | 105 | 0.48 | 9,649 |
| Machinery repair & farm vehicle expense | 343 | 1.57 | 31,473 |
| Fuel, oil & grease | 239 | 1.09 | 21,922 |
| Replacement livestock | 32 | 0.15 | 2,930 |
| Breeding | 68 | 0.31 | 6,225 |
| Veterinary & medicine | 107 | 0.49 | 9,811 |
| Milk marketing | 266 | 1.22 | 24,422 |
| Bedding | 60 | 0.28 | 5,518 |
| Milking supplies | 133 | 0.61 | 12,187 |
| Cattle lease | 1 | 0.01 | 127 |
| Custom boarding | 12 | 0.05 | 1,101 |
| bST expense | 8 | 0.04 | 749 |
| Livestock professional fees | 27 | 0.12 | 2,494 |
| Other livestock expense | 67 | 0.31 | 6,136 |
| Fertilizer & lime | 176 | 0.81 | 16,171 |
| Seeds & plants | 119 | 0.55 | 10,957 |
| Spray & other crop expenses | 68 | 0.31 | 6,281 |
| Crop professional fees | 1 | 0.01 | 110 |
| Land, building, fence repair | 72 | 0.33 | 6,629 |
| Taxes | 96 | 0.44 | 8,840 |
| Real estate rent/lease | 65 | 0.30 | 5,968 |
| Insurance | 78 | 0.36 | 7,197 |
| Utilities | 132 | 0.61 | 12,129 |
| Other professional fees | 21 | 0.09 | 1,900 |
| Miscellaneous | <u>28</u> | <u>0.13</u> | <u>2,603</u> |
| Total Less Interest Paid | \$4,391 | \$20.13 | \$403,211 |
| <u>Net Accrual Operating Income (without interest paid)</u> | 2,038 | 9.34 | 187,094 |
| - Change in livestock/crop inventory* | 264 | 1.21 | 24,212 |
| - Change in accounts receivable | 52 | 0.24 | 4,780 |
| - Change in feed/supply inventory** | 193 | 0.88 | 17,680 |
| + Change in accounts payable*** | <u>-22</u> | <u>-0.10</u> | <u>-2,023</u> |
| NET CASH FLOW | \$1,507 | \$ 6.91 | \$138,399 |
| - Net personal withdrawals from farm (see footnote p.15) | <u>420</u> | <u>1.92</u> | <u>38,566</u> |
| Available for Farm Debt Payments & Investments | \$1,087 | \$ 4.98 | \$ 99,834 |
| - Farm debt payments | <u>675</u> | <u>3.09</u> | <u>61,972</u> |
| Available for Farm Investment | \$ 412 | \$ 1.89 | \$ 37,861 |
| - Capital purchases: cattle, machinery & improvements | <u>1,441</u> | <u>6.60</u> | <u>132,270</u> |
| Additional Capital Needed | \$1,028 | \$ 4.71 | \$ 94,408 |

*Includes change in advance government receipts. **Includes change in prepaid expenses.

***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, the level of crop yields, and what it costs to produce crops is important in evaluating alternative cropping and feed purchasing alternatives.

LAND RESOURCES AND CROP PRODUCTION

44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | | Top 50% Farm | | |
|----------------------|------------------|---------------|------------------------|--------------|---------------|------------------------|
| Land | <u>Owned</u> | <u>Rented</u> | <u>Total</u> | <u>Owned</u> | <u>Rented</u> | <u>Total</u> |
| Tillable | 132 | 145 | 278 | 124 | 145 | 269 |
| Nontillable | 24 | 19 | 43 | 14 | 22 | 36 |
| Other nontillable | <u>63</u> | <u>10</u> | <u>73</u> | <u>51</u> | <u>17</u> | <u>68</u> |
| Total | 219 | 174 | 393 | 189 | 184 | 373 |
| Crop Yields | <u>Farms</u> | <u>Acres*</u> | <u>Production/Acre</u> | <u>Farms</u> | <u>Acres</u> | <u>Production/Acre</u> |
| Hay crop | 39 | 202 | 2.26 tn DM | 19 | 197 | 2.55 tn DM |
| Corn silage | 37 | 71 | 17.30 tn | 17 | 89 | 18.50 tn |
| | | | 5.93 tn DM | | | 6.24 tn DM |
| Other forage | 4 | 40 | 2.48 tn DM | 2 | 53 | 2.88 tn DM |
| Total forage | 39 | 274 | 3.17 tn DM | 19 | 282 | 3.60 tn DM |
| Corn grain | 11 | 41 | 148 bu | 5 | 40 | 164 bu |
| Oats | 1 | 27 | 46 bu | 0 | 0 | 0 bu |
| Wheat | 1 | 20 | 45 bu | 1 | 20 | 45 bu |
| Other crops | 8 | 71 | | 5 | 40 | |
| Tillable pasture | 9 | 43 | | 3 | 41 | |
| Idle | 6 | 24 | | 3 | 8 | |
| Total Tillable Acres | 44 | 278 | | 22 | 269 | |

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 179, corn silage 60, corn grain 10, oats 1, tillable pasture 9, and idle 3.

Average crop acres and yields 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

39 Small Herd Dairy Farms, 2014**

| Item | Average 39 Farms | Top 50% Farm |
|---|------------------|--------------|
| Total tillable acres per cow | 3.65 | 3.13 |
| Total forage acres per cow | 3.29 | 2.84 |
| Harvested forage dry matter, tons per cow | 10.45 | 10.21 |

**Excludes farms that do not harvest forages.

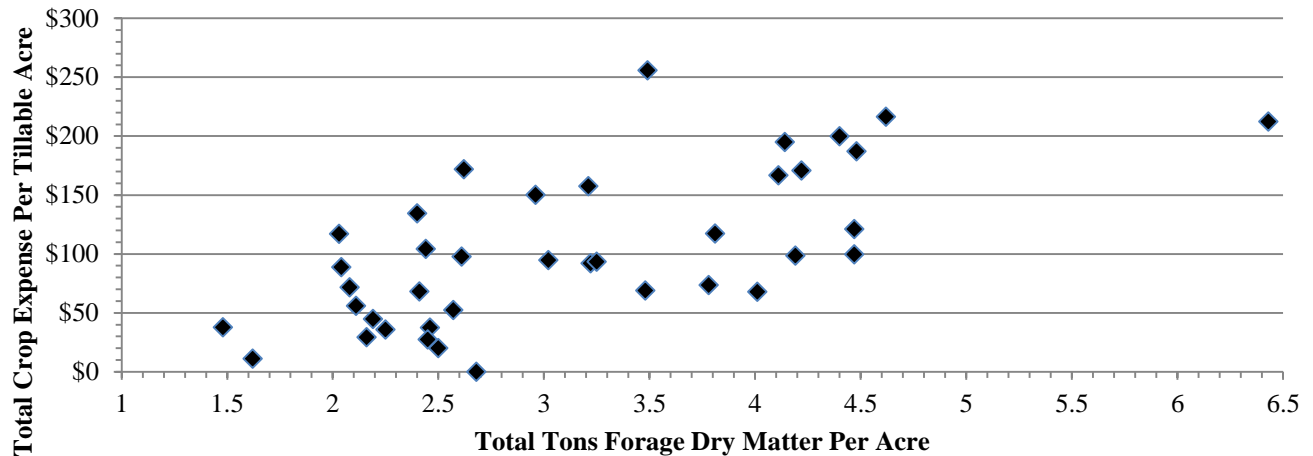
Cropping Analysis (continued)

Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs. Intensive grazing was used on 12 farms, 7 of which are in the "top 50% farms" group.

CROP RELATED ACCRUAL EXPENSES
Small Herd Dairy Farms Reporting Forage Production, 2014

| Item | Average 39 farms | | Top 50% Farms | |
|-----------------------------|-------------------------|--------|---------------|--------|
| | Total Per Tillable Acre | | | |
| Number of farms reporting | 39 | | 19 | |
| Average number of acres | 303 | | 311 | |
| Fertilizer & lime expenses | \$ | 52.46 | \$ | 63.93 |
| Seeds & plants | | 30.74 | | 39.20 |
| Spray & other crop expenses | | 20.50 | | 24.96 |
| TOTAL | \$ | 103.70 | \$ | 128.09 |

CROP EXPENSE PER ACRE AND TOTAL FORAGE PRODUCTION PER ACRE
39 Small Herd Farms That Grow Forages, 2014



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
39 Small Herd Dairy Farms That Grow Forages, 2014

| Machinery Expense | Average 39 farms | | Top 50% Farms | |
|------------------------------------|------------------|-------------------|----------------|-------------------|
| | Total Expenses | Per Tillable Acre | Total Expenses | Per Tillable Acre |
| Fuel, oil & grease | \$ 20,744 | \$ 68.37 | \$ 24,741 | \$ 79.55 |
| Machinery repair & vehicle expense | 28,264 | 93.15 | 35,711 | 114.83 |
| Machine hire, rent & lease | 6,876 | 22.66 | 10,263 | 33.00 |
| Interest (5%) | 13,348 | 43.99 | 13,792 | 44.35 |
| Depreciation | 24,902 | 82.07 | 28,574 | 91.88 |
| Total | \$ 94,133 | \$ 310.24 | \$ 113,081 | \$ 363.61 |

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 8 and 9.

DAIRY HERD INVENTORY
44 Small Herd Dairy Farms, 2014

| Item | Dairy Cows | | Bred | | Heifer Open | | Calves | |
|--------------------------|------------|--------------|------|------------------|-------------|------------|--------|------------|
| | No. | Value | No. | Value | No. | Value | No. | Value |
| <u>Average 44 Farms:</u> | | | | | | | | |
| Beg. year (owned) | 78 | \$115,632 | 23 | \$31,045 | 24 | \$21,303 | 19 | \$9,695 |
| + Change w/o apprec. | | 7,601 | | 1,925 | | 1,911 | | 1,403 |
| + Appreciation | | <u>1,220</u> | | <u>341</u> | | <u>164</u> | | <u>203</u> |
| End year (owned) | 83 | \$124,453 | 25 | \$33,311 | 27 | \$23,378 | 22 | \$11,302 |
| End including leased | 84 | | | | | | | |
| Average number | 81 | | 68 | (all age groups) | | | | |
| <u>Top 50% Farms:</u> | | | | | | | | |
| Beg. year (owned) | 89 | \$135,539 | 26 | \$36,018 | 26 | \$23,039 | 22 | \$11,984 |
| + Change w/o apprec. | | 5,618 | | 591 | | 4,900 | | 2,014 |
| + Appreciation | | <u>295</u> | | <u>159</u> | | <u>191</u> | | <u>200</u> |
| End year (owned) | 93 | \$141,452 | 27 | \$36,768 | 32 | \$28,130 | 26 | \$14,198 |
| End including leased | 94 | | | | | | | |
| Average number | 92 | | 80 | (all age groups) | | | | |

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. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

MILK PRODUCTION
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | Top 50% Farms |
|---|------------------|---------------|
| Total milk sold, lbs. | 1,620,763 | 2,003,485 |
| Milk sold per cow, lbs. | 20,121 | 21,820 |
| Average milk plant test, percent butterfat (average of farms reporting) | 3.99 | 4.04 |

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

ANIMALS LEAVING THE HERD
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | Top 50% Farms | |
|---------------------|------------------|----------|---------------|----------|
| | Number | Percent* | Number | Percent* |
| Cows sold for beef | 18 | 22.4 | 21 | 23.2 |
| Cows sold for dairy | 1 | 0.8 | 0 | 0.5 |
| Cows died | 4 | 4.7 | 4 | 4.8 |
| Culling rate** | | 27.1 | | 28.0 |

*Percent of average number of cows in the herd.

**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**
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | | Top 50% Farms | | |
|---------------------------------------|------------------|----------|----------|---------------|----------|----------|
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| <u>Accrual Cost of Producing Milk</u> | | | | | | |
| Operating costs | \$ 280,289 | \$ 3,480 | \$ 17.29 | \$ 339,222 | \$ 3,694 | \$ 16.93 |
| Purchased inputs costs | \$ 307,454 | \$ 3,817 | \$ 18.97 | \$ 368,417 | \$ 4,012 | \$ 18.39 |
| Total costs | \$ 411,769 | \$ 5,112 | \$ 25.41 | \$ 466,601 | \$ 5,082 | \$ 23.29 |
| <u>Accrual Receipts</u> | | | | | | |
| <u>From Milk</u> | \$ 414,682 | \$ 5,148 | \$ 25.59 | \$ 516,803 | \$ 5,628 | \$ 25.80 |
| Net Milk Receipts | \$ 396,215 | \$ 4,919 | \$ 24.45 | \$ 492,381 | \$ 5,362 | \$ 24.58 |
| Net Farm Income | | | | | | |
| without Appreciation | \$ 107,227 | \$ 1,331 | \$ 6.62 | \$ 148,386 | \$ 1,616 | \$ 7.41 |
| Net Farm Income | | | | | | |
| with Appreciation | \$ 116,382 | \$ 1,445 | \$ 7.18 | \$ 153,718 | \$ 1,674 | \$ 7.67 |

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Feed and crop expenses include total purchased dairy feed plus fertilizer, seeds, spray and other crop expenses.

DAIRY RELATED ACCRUAL EXPENSES
44 Small Herd Dairy Farms, 2014

| Item | Average 44 Farms | | Top 50% Farms | |
|--|------------------|----------|---------------|----------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Purchased dairy grain & concentrate | \$ 1,383 | \$ 6.87 | \$ 1,542 | \$ 7.07 |
| Purchased dairy roughage | 124 | 0.61 | 134 | 0.62 |
| Total Purchased Dairy Feed | \$ 1,507 | \$ 7.49 | \$ 1,677 | \$ 7.68 |
| Purchased grain & conc. as % of milk receipts | | 26% | | 27% |
| Purchased feed & crop expense | \$ 1,846 | \$ 9.18 | \$ 2,042 | \$ 9.36 |
| Purchased feed & crop expense as % of milk receipts | | 35% | | 36% |
| Breeding | \$ 67 | \$ 0.33 | \$ 68 | \$ 0.31 |
| Veterinary & medicine | 107 | 0.53 | 107 | 0.49 |
| Milk marketing | 229 | 1.14 | 266 | 1.22 |
| Bedding | 61 | 0.30 | 66 | 0.28 |
| Milking supplies | 121 | 0.60 | 133 | 0.61 |
| Cattle lease | 1 | 0.01 | 1 | 0.01 |
| Custom boarding | 7 | 0.03 | 12 | 0.05 |
| bST | 12 | 0.06 | 8 | 0.04 |
| Livestock professional fees | 23 | 0.11 | 27 | 0.12 |
| Other livestock expense | 63 | 0.31 | 67 | 0.31 |

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how effectively 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

44 Small Herd Dairy Farms, 2014

| Item | Per Worker | Per Cow | Per Tillable Acre | Per Tillable Acre Owned |
|--------------------------|-------------------|------------------|----------------------|-------------------------|
| <u>Average 44 Farms:</u> | | | | |
| Farm capital* | \$398,461 | \$14,009 | \$3,917 | \$7,758 |
| Real estate* | | 6,510 | | 3,605 |
| Machinery & equipment | 85,794 | 3,014 | 875 | |
| <u>Ratios</u> | | | | |
| Asset turnover* | Operating Expense | Interest Expense | Depreciation Expense | |
| 0.43 | 0.70 | 0.02 | 0.06 | |
| <u>Top 50% Farms:</u> | | | | |
| Farm capital* | \$408,123 | \$ 13,032 | \$4,056 | \$7,952 |
| Real estate* | | 5,645 | | 3,444 |
| Machinery & equipment | 88,112 | 2,687 | 917 | |
| <u>Ratios</u> | | | | |
| Asset turnover* | Operating Expense | Interest Expense | Depreciation Expense | |
| 0.51 | 0.69 | 0.01 | 0.05 | |

*Excludes rented farms.

LABOR FORCE INVENTORY AND ANALYSIS

44 Small Herd Dairy Farms, 2014

| Labor Force | Months | Age | Years of Education | Value of Labor & Management |
|-----------------------------|--------|---|--------------------|-----------------------------|
| <u>Average 44 Farms:</u> | | | | |
| Operator number 1 | 14.1 | 49 | 14 | \$ 38,809 |
| Operator number 2 | 3.1 | 53 | 15 | 9,534 |
| Operator number 3 | 0.8 | 25 | 16 | 1,477 |
| Family paid | 3.5 | | | |
| Family unpaid | 4.6 | | | |
| Hired | 8.0 | | | |
| Total | 34.0 | / 12 = 2.83 Worker Equivalent 1.27 Operator/Manager Equivalent | | |
| <u>Top 50% Farms:</u> Total | 33.58 | / 12 = 2.80 Worker Equivalent 1.15 Operator/Manager Equivalent | | |
| Operator's | | | | |

| Labor Efficiency | Average 44 Farms | | Top 50% Farms | |
|----------------------|------------------|------------|---------------|------------|
| | Total | Per Worker | Total | Per Worker |
| Cows, average number | 81 | 28 | 92 | 33 |
| Milk sold, pounds | 1,620,763 | 572,034 | 2,003,485 | 715,956 |
| Tillable acres | 278 | 98 | 269 | 96 |

| Labor Costs | Average 44 Farms | | | Top 50% Farms | | |
|---|------------------|----------|----------|---------------|----------|----------|
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| Value of operator(s) | | | | | | |
| labor (\$2,600/month) | \$46,696 | \$ 580 | \$ 2.88 | \$42,510 | \$ 463 | \$ 2.12 |
| Family unpaid (\$2,600/month) | 11,960 | 148 | 0.74 | 10,894 | 119 | 0.54 |
| Hired | 27,133 | 337 | 1.67 | 35,741 | 389 | 1.78 |
| Total Labor | \$85,789 | \$ 1,065 | \$ 5.29 | \$89,145 | \$ 971 | \$ 4.45 |
| Machinery Cost | \$87,237 | \$ 1,083 | \$ 5.38 | \$101,015 | \$ 1,100 | \$ 5.04 |
| Total Labor & Machinery | \$173,026 | \$ 2,148 | \$ 10.68 | \$190,160 | \$ 2,071 | \$ 9.49 |
| Hired labor expense per hired worker equivalent | | \$28,461 | | | \$32,890 | |
| Hired labor expense as % of milk sales | | 6.5% | | | 6.9% | |

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Comparison to Top 50 Percent

Comparing your business with average data from DFBS cooperators that participated in both of the last two years can be helpful in establishing your goals for these parameters. Both the average of the same 33 farms and the top 50% of farms based on rate of return of all assets without appreciation are presented below. 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 33 Small Herd Dairy Farms, 2013 & 2014

| Selected Factors | Average of Same 33 Farms* | | Average of Same 15 Top 50% Farms* | |
|---|---------------------------|------------|-----------------------------------|------------|
| | 2013 | 2014 | 2013 | 2014 |
| <u>Size of Business</u> | | | | |
| Average number of cows | 77 | 77 | 92 | 94 |
| Average number of heifers | 62 | 66 | 78 | 81 |
| Milk sold, lbs. | 1,542,253 | 1,540,830 | 2,064,523 | 2,096,444 |
| Worker equivalent | 2.69 | 2.75 | 2.73 | 2.82 |
| Total tillable acres | 273 | 281 | 275 | 277 |
| <u>Rates of Production</u> | | | | |
| Milk sold per cow, lbs. | 19,983 | 19,910 | 22,538 | 22,255 |
| Hay DM per acre, tons | 2.1 | 2.2 | 2.3 | 2.6 |
| Corn silage per acre, tons | 16.1 | 18.1 | 16.8 | 19.7 |
| <u>Labor Efficiency</u> | | | | |
| Cows per worker | 29 | 28 | 34 | 33 |
| Milk sold/worker, lbs. | 574,218 | 559,963 | 757,160 | 742,981 |
| <u>Cost Control</u> | | | | |
| Grain & concentrate purchased as % of milk sales | 29% | 25% | 32% | 27% |
| Dairy feed & crop expense per cwt. milk | \$ 8.27 | \$ 8.81 | \$ 8.88 | \$ 9.28 |
| Labor & machinery costs/cow | \$ 1,968 | \$ 2,158 | \$ 1,861 | \$ 2,009 |
| Operating cost of producing cwt. of milk | \$ 15.72 | \$ 17.00 | \$ 15.29 | \$ 16.83 |
| <u>Capital Efficiency**</u> | | | | |
| Farm capital per cow*** | \$ 13,694 | \$ 14,531 | \$ 12,166 | \$ 12,932 |
| Machinery & equipment per cow | \$ 6,003 | \$ 6,403 | \$ 4,446 | \$ 4,784 |
| Asset turnover ratio*** | 0.37 | 0.40 | 0.48 | 0.52 |
| <u>Profitability</u> | | | | |
| Net farm income w/o appreciation | \$ 59,875 | \$ 101,464 | \$ 92,771 | \$ 155,450 |
| Net farm income with appreciation | \$ 70,045 | \$ 110,284 | \$ 104,245 | \$ 163,822 |
| Labor & management income per operator/manager | \$ 10,439 | \$ 37,056 | \$ 39,998 | \$ 86,893 |
| Rate of return on equity capital with appreciation | 2.0% | 5.8% | 6.6% | 12.5% |
| Rate of return on all capital with appreciation | 2.4% | 5.3% | 5.9% | 10.2% |
| <u>Financial Summary</u> | | | | |
| Farm net worth, end year | \$ 817,408 | \$ 890,483 | \$ 783,634 | \$ 895,877 |
| Debt to asset ratio | 0.22 | 0.21 | 0.25 | 0.24 |
| Farm debt per cow | \$ 2,995 | \$ 2,992 | \$ 2,849 | \$ 2,967 |

*Farms participating both years. **Average for the year. ***Excludes rented farms.

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 33 Small Herd Dairy Farms, 2013 & 2014

| Item | 2013 | | 2014 | |
|--|------------|-------------|------------|-------------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 77 | | 77 | |
| Cwt. of Milk Sold | | 15,423 | | 15,408 |
| <u>ACCRUAL OPERATING RECEIPTS</u> | | | | |
| Milk | \$4,251 | \$21.27 | \$5,066 | \$25.45 |
| Dairy cattle | 323 | 1.61 | 341 | 1.71 |
| Dairy calves | 25 | 0.13 | 89 | 0.44 |
| Other livestock | 7 | 0.04 | 11 | 0.06 |
| Crops | 136 | 0.68 | 110 | 0.55 |
| Miscellaneous receipts | <u>209</u> | <u>1.04</u> | <u>125</u> | <u>0.63</u> |
| Total Receipts | \$4,951 | \$24.78 | \$5,742 | \$28.84 |
| <u>ACCRUAL OPERATING EXPENSES</u> | | | | |
| Hired labor | \$ 304 | \$ 1.52 | \$ 328 | \$ 1.65 |
| Dairy grain & concentrate | 1,262 | 6.32 | 1,332 | 6.69 |
| Dairy roughage | 77 | 0.39 | 110 | 0.55 |
| Nondairy feed | 0 | 0.00 | 3 | 0.01 |
| Professional nutritional services | 0 | 0.00 | 0 | 0.00 |
| Machine hire/rent/lease | 119 | 0.59 | 105 | 0.53 |
| Mach. repair & vehicle exp. | 264 | 1.32 | 305 | 1.53 |
| Fuel, oil & grease | 221 | 1.11 | 223 | 1.12 |
| Replacement livestock | 49 | 0.25 | 35 | 0.18 |
| Breeding | 65 | 0.32 | 65 | 0.33 |
| Veterinary & medicine | 95 | 0.48 | 98 | 0.49 |
| Milk marketing | 219 | 1.10 | 223 | 1.12 |
| Bedding | 48 | 0.24 | 55 | 0.28 |
| Milking supplies | 109 | 0.55 | 126 | 0.63 |
| Cattle lease | 1 | 0.01 | 2 | 0.01 |
| Custom boarding | 26 | 0.13 | 9 | 0.04 |
| bST expense | 6 | 0.03 | 9 | 0.05 |
| Livestock professional fees | 27 | 0.13 | 24 | 0.12 |
| Other livestock expense | 39 | 0.20 | 58 | 0.29 |
| Fertilizer & lime | 154 | 0.77 | 157 | 0.79 |
| Seeds & plants | 101 | 0.51 | 100 | 0.50 |
| Spray/other crop expense | 55 | 0.28 | 54 | 0.27 |
| Crop professional fees | 2 | 0.01 | 2 | 0.01 |
| Land, building, fence repair | 74 | 0.37 | 86 | 0.43 |
| Taxes | 106 | 0.53 | 111 | 0.56 |
| Real estate rent/lease | 58 | 0.29 | 57 | 0.29 |
| Insurance | 72 | 0.36 | 85 | 0.43 |
| Utilities | 136 | 0.68 | 150 | 0.75 |
| Interest paid | 104 | 0.52 | 102 | 0.51 |
| Other professional fees | 25 | 0.12 | 22 | 0.11 |
| Miscellaneous | <u>21</u> | <u>0.10</u> | <u>22</u> | <u>0.11</u> |
| Total Operating Expenses | \$3,841 | \$19.22 | \$4,058 | \$20.38 |
| Expansion Livestock | 0 | 0.00 | 3 | 0.02 |
| Extraordinary Expense | 9 | 0.04 | 7 | 0.03 |
| Machinery Depreciation | 256 | 1.28 | 310 | 1.56 |
| Real Estate Depreciation | <u>70</u> | <u>0.35</u> | <u>53</u> | <u>0.26</u> |
| Total Expenses | \$4,176 | \$20.89 | \$4,431 | \$22.25 |
| Net Farm Income Without Appreciation | \$ 776 | \$ 3.88 | \$1,311 | \$ 6.59 |

RECEIPTS AND EXPENSES PER COW AND PER CWT.

Same 15 Top 50% Small Herd Dairy Farms, 2013 & 2014

| Item | 2013 | | 2014 | |
|--|------------|-------------|------------|-------------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 92 | | 94 | |
| Cwt. Of Milk Sold | | 20,645 | | 20,964 |
| <u>ACCRUAL OPERATING RECEIPTS</u> | | | | |
| Milk | \$4,824 | \$21.40 | \$5,738 | \$25.78 |
| Dairy cattle | 412 | 1.83 | 326 | 1.46 |
| Dairy calves | 30 | 0.13 | 105 | 0.47 |
| Other livestock | -3 | -0.01 | 8 | 0.04 |
| Crops | 152 | 0.67 | 162 | 0.73 |
| Miscellaneous receipts | <u>206</u> | <u>0.91</u> | <u>144</u> | <u>0.64</u> |
| Total Receipts | \$5,620 | \$24.94 | \$6,482 | \$29.12 |
| <u>ACCRUAL OPERATING EXPENSES</u> | | | | |
| Hired labor | \$ 316 | \$ 1.40 | \$ 359 | \$ 1.61 |
| Dairy grain & concentrate | 1,575 | 6.99 | 1,612 | 7.25 |
| Dairy roughage | 131 | 0.58 | 155 | 0.70 |
| Nondairy feed | 0 | 0.00 | 0 | 0.00 |
| Professional nutritional services | 0 | 0.00 | 0 | 0.00 |
| Machine hire/rent/lease | 161 | 0.71 | 148 | 0.66 |
| Mach. repair & vehicle exp. | 245 | 1.09 | 295 | 1.32 |
| Fuel, oil & grease | 203 | 0.90 | 220 | 0.99 |
| Replacement livestock | 46 | 0.20 | 40 | 0.18 |
| Breeding | 68 | 0.30 | 63 | 0.28 |
| Veterinary & medicine | 104 | 0.46 | 104 | 0.47 |
| Milk marketing | 261 | 1.16 | 262 | 1.18 |
| Bedding | 54 | 0.24 | 54 | 0.24 |
| Milking supplies | 113 | 0.50 | 152 | 0.68 |
| Cattle lease | 2 | 0.01 | 2 | 0.01 |
| Custom boarding | 49 | 0.22 | 16 | 0.07 |
| bST expense | 6 | 0.03 | 9 | 0.04 |
| Livestock professional fees | 27 | 0.12 | 30 | 0.13 |
| Other livestock expense | 29 | 0.13 | 58 | 0.26 |
| Fertilizer & lime | 158 | 0.70 | 139 | 0.62 |
| Seeds & plants | 85 | 0.38 | 102 | 0.46 |
| Spray/other crop expense | 49 | 0.22 | 54 | 0.24 |
| Crop professional fees | 3 | 0.01 | 2 | 0.01 |
| Land, building, fence repair | 65 | 0.29 | 95 | 0.43 |
| Taxes | 98 | 0.44 | 97 | 0.44 |
| Real estate rent/lease | 64 | 0.29 | 68 | 0.30 |
| Insurance | 62 | 0.27 | 84 | 0.38 |
| Utilities | 122 | 0.54 | 133 | 0.60 |
| Interest paid | 98 | 0.43 | 89 | 0.40 |
| Other professional fees | 26 | 0.12 | 23 | 0.10 |
| Miscellaneous | <u>22</u> | <u>0.10</u> | <u>26</u> | <u>0.12</u> |
| Total Operating Expenses | \$4,244 | \$18.83 | \$4,489 | \$20.17 |
| Expansion Livestock | 0 | 0.00 | 0 | 0.00 |
| Extraordinary Expense | 16 | 0.07 | 12 | 0.06 |
| Machinery Depreciation | 269 | 1.19 | 293 | 1.32 |
| Real Estate Depreciation | <u>79</u> | <u>0.35</u> | <u>37</u> | <u>0.17</u> |
| Total Expenses | \$4,608 | \$20.44 | \$4,831 | \$21.72 |
| Net Farm Income Without Appreciation | \$1,013 | \$ 4.49 | \$1,650 | \$ 7.41 |

Regional 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

44 Small Herd Dairy Farms, 2014

| Size of Business | | | Rate of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | 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)* | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 4.4 | 130 | 2,928,908 | 25,542 | 3.7 | 22 | 43 | 934,695 |
| 3.6 | 109 | 2,270,038 | 22,273 | 2.7 | 19 | 33 | 691,098 |
| 2.8 | 74 | 1,428,154 | 20,322 | 2.1 | 16 | 28 | 543,400 |
| 2.2 | 55 | 993,305 | 17,343 | 1.6 | 12 | 23 | 447,294 |
| 1.5 | 40 | 628,762 | 12,724 | 0.5 | 2 | 20 | 287,975 |

| Cost Control | | | | | | Culling Rates | |
|----------------------|-----------------------------|-------------------------|---------------------------------|------------------------------|------------------------------------|---------------|-----------|
| 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 | Death Rate | Sell Rate |
| (12) | (12) | (14) | (14) | (12) | (12) | (12) | (12) |
| \$639 | 16% | \$558 | \$1,537 | \$922 | \$6.09 | 1.2% | 10.1% |
| 1,051 | 23 | 793 | 1,803 | 1,375 | 8.07 | 2.6 | 16.9 |
| 1,328 | 26 | 1,004 | 2,118 | 1,797 | 8.80 | 4.0 | 23.4 |
| 1,574 | 29 | 1,303 | 2,456 | 2,190 | 9.83 | 6.2 | 28.2 |
| 2,049 | 35 | 1,614 | 2,960 | 2,649 | 11.93 | 10.0 | 37.0 |

| Value and Cost of Milk Production | | | Profitability | | | |
|-----------------------------------|------------------------------------|--------------------------------|--|----------------------------------|-----------------------------------|---------------------------------------|
| Milk Receipts Per Cow | Operating Cost Production Per Cwt. | Total Cost Production Per Cwt. | % Rate of Return on All Capital w/o 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) |
| \$6,533 | \$13.42 | \$21.28 | 17.6% | \$206,506 | \$115,596 | \$164,275 |
| 5,727 | 16.15 | 23.55 | 8.8 | 146,353 | 76,041 | 115,391 |
| 5,293 | 17.22 | 25.25 | 5.9 | 109,351 | 50,257 | 77,870 |
| 4,418 | 18.85 | 28.20 | 1.7 | 68,873 | 18,443 | 44,742 |
| 3,127 | 20.48 | 38.12 | -4.3 | 16,085 | -35,152 | 2,166 |

*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. One area that was examined this year was the source of dairy replacements.

SOURCE OF DAIRY REPLACEMENTS 32 Dairy Farms, 2014

| <u>Animals Entering Herd</u> | Average |
|--|---------|
| Number calving in 2014 for first time | 409 |
| Animals purchased, % ¹ | 3.0 |
| Animals raised by farm, % ² | 97.0 |
| <u>Current Heifer Inventory</u> | |
| Raised on dairy, % | 83.4 |
| Raised by a custom grower, % | 16.6 |

¹ Animals purchased are animals purchased from a different farm and were not the farm's genetics.

² 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, 409 animals calved for the first time in 2014. The breakdown on the source of these animals was 3.0 percent purchased and 97.0 percent raised on the farm. Of the current heifer inventory, 83.4 percent were raised on the dairy and 16.6 percent were 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, 15 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 line item in this section is the expense associated with utilizing forward contracting or hedging programs to market milk, such as commissions or broker fees. The fifth area is income 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. For participating farms, the net farm price can be found on page 13 of the DFBS report.

The table on page 9 reports the averages for these different areas. The table on page 10 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 fifths. Numbers for the different areas will not add to the totals for that quintile 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* MILK INCOME AND MARKETING REPORT
15 Small Herd Dairy Farms, 2014

| | Pounds | Percent | Price/Pound | Total | \$/Cwt of Milk |
|--|-----------|---------|-------------|-----------|-----------------|
| BASE FARM PRICE | | | | | |
| Butterfat | 75,644 | 3.97% | \$2.36 | \$178,446 | \$9.37 |
| Protein | 59,164 | 3.11% | \$3.83 | \$225,147 | \$11.82 |
| Solids | 107,400 | 5.64% | \$0.48 | \$ 50,978 | \$2.68 |
| Total Component Contribution | | | | | \$ 23.86 |
| PPD | 1,905,394 | | | \$ 22,030 | \$ 1.16 |
| Base Farm Price | | | | | \$ 25.01 |
| Premiums | | | | | |
| Quality | | | | \$ 4,825 | \$0.25 |
| Volume | | | | \$ 1,441 | \$0.08 |
| Market Premiums | | | | \$ 1,815 | \$0.10 |
| Total Premiums | | | | | \$ 0.42 |
| BASE FARM PRICE + PREMIUM | | | | | \$ 25.44 |
| <hr style="border-top: 1px dashed black;"/> | | | | | |
| Deductions | | | | | |
| Promo | | | | \$ 2,864 | \$0.15 |
| Hauling & Coop Dues | | | | \$ 15,468 | \$0.81 |
| Total Deductions | | | | | \$ 0.96 |
| BASE FARM PRICE + PREMIUMS - DEDUCTIONS | | | | | \$ 24.48 |
| Marketing Programs | | | | | |
| Futures Contracts, Forward Contracting, Etc. | | | | \$ -599 | \$-0.03 |
| Total Marketing Income | | | | | \$-0.03 |
| Patronage Dividends | | | | \$ 4,256 | \$ 0.22 |
| NET PRICE RECEIVED ON FARM, ALL SOURCES | | | | | \$ 24.67 |

Net Marketing Value, per cwt. (PPD + Total Premiums – Total Deductions)

\$ 0.62

*Each calculation of an average is independent of the 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. The average herd size of these 15 farms is 93 cows.

MILK PRICE INFORMATION BY QUARTILE*
(Each Category Sorted Independently)
15 Small Herd Dairy Farms, 2014

| | Lowest Quartile | ←—————→ | Highest Quartile |
|---|--------------------|-----------------|---------------------|
| Butterfat, % | 3.71 | 3.93 | 4.42 |
| Protein, % | 2.96 | 3.05 | 3.29 |
| Other Solids, % | 5.28 | 5.67 | 5.87 |
| Butterfat, \$ per Cwt. | 8.78 | 9.22 | 10.50 |
| Protein, \$ per Cwt. | 11.22 | 11.62 | 12.88 |
| Other solids, \$ per Cwt. | 2.64 | 2.66 | 2.71 |
| Total Component Value per Cwt. | \$ 22.71 | \$ 23.48 | \$ 25.93 |
| PPD, \$ per Cwt. | 0.82 | 0.94 | 1.67 |
| Base Farm Price per Cwt. | \$ 23.93 | \$ 24.71 | \$ 26.97 |
| Quality, \$ per Cwt. | 0.04 | 0.13 | 0.73 |
| Volume, \$ per Cwt. | 0.00 | 0.00 | 0.16 |
| Market premium, \$ per Cwt. | -0.38 | 0.13 | 0.81 |
| Total Premium, \$ per Cwt. | 0.05 | 0.36 | 1.23 |
| Base Farm Price + Premiums per Cwt. | \$ 24.10 | \$ 25.21 | \$ 28.06 |
| Promotion, \$ per Cwt. | 0.15 | 0.15 | 0.15 |
| Hauling & Coop Dues \$ per Cwt. | 0.34 | 0.73 | 1.28 |
| Total Marketing Expenses per Cwt. | \$ 0.49 | \$ 0.88 | \$ 1.43 |
| Base + Premiums – Deductions per Cwt. | \$ 23.37 | \$ 24.09 | \$ 26.96 |
| Futures contract, forward contracting, \$ per Cwt. | -0.08 | 0.00 | 0.00 |
| Total Marketing Income, \$ per Cwt. | \$ -0.08 | \$ 0.00 | \$ 0.00 |
| Patronage Dividends, \$ per Cwt. | \$ 0.00 | \$ 0.00 | \$ 0.78 |
| Net Price Received From All Sources, \$ per Cwt. | \$ 23.48 | \$ 24.26 | \$ 27.09 |
| Net Marketing Value, \$ per Cwt. (PPD + Total Premiums – Total Deductions) | 0.23 | 0.57 | 1.34 |

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

New York State Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 171 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. **Each column of the chart is independent of the others.** The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the top 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

171 New York Dairy Farms, 2013

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------------|---|---------------------------------------|---|--|--|-------------------------------|---|
| Worker Equiv- alent (14)* | No. of Cows (12) | Pounds Milk Sold (12) | Pounds Milk Sold Per Cow (12) | Tons Hay Crop DM/Acre (11) | Tons Corn Silage Per Acre (11) | Cows Per Worker (14) | Pounds Milk Sold Per Worker (14) |
| 39.9 | 1,976 | 52,254,852 | 28,620 | 5.3 | 24 | 64 | 1,544,121 |
| 26.0 | 1,187 | 31,161,995 | 27,342 | 4.5 | 21 | 53 | 1,298,023 |
| 20.9 | 968 | 25,221,350 | 26,638 | 4.1 | 20 | 49 | 1,211,659 |
| 17.6 | 764 | 19,848,109 | 26,051 | 3.7 | 19 | 46 | 1,154,144 |
| 14.1 | 614 | 15,011,729 | 25,370 | 3.4 | 18 | 44 | 1,092,286 |
| ----- | | | | | | | |
| 10.5 | 438 | 10,936,395 | 24,516 | 3.1 | 17 | 41 | 1,006,486 |
| 6.8 | 284 | 6,492,159 | 23,399 | 2.8 | 16 | 38 | 883,376 |
| 4.4 | 162 | 3,307,891 | 21,767 | 2.4 | 15 | 34 | 759,105 |
| 2.9 | 94 | 1,828,527 | 18,508 | 2.0 | 12 | 28 | 592,477 |
| 1.9 | 52 | 866,932 | 13,668 | 0.7 | 1 | 22 | 385,315 |
| ----- | | | | | | | |
| Cost Control | | | | | | | |
| Grain Bought Per Cow (12) | % Grain is of Milk Receipts (12) | Machinery Costs Per Cow (14) | Labor & Machinery Costs Per Cow (14) | Feed & Crop Expenses Per Cow (12) | Feed & Crop Expenses Per Cwt. Milk (12) | | |
| \$774 | 21% | \$495 | \$1,118 | \$1,040 | \$6.20 | | |
| 1,215 | 27 | 683 | 1,445 | 1,588 | 7.48 | | |
| 1,385 | 28 | 762 | 1,561 | 1,823 | 8.06 | | |
| 1,558 | 30 | 826 | 1,664 | 1,976 | 8.31 | | |
| 1,645 | 32 | 894 | 1,719 | 2,106 | 8.68 | | |
| ----- | | | | | | | |
| 1,748 | 33 | 952 | 1,800 | 2,202 | 9.02 | | |
| 1,854 | 34 | 1,000 | 1,902 | 2,325 | 9.33 | | |
| 1,944 | 36 | 1,079 | 2,032 | 2,430 | 9.68 | | |
| 2,067 | 38 | 1,170 | 2,181 | 2,564 | 10.08 | | |
| 2,287 | 41 | 1,419 | 2,577 | 2,818 | 11.63 | | |

*Page number of the participant's DFBS report where the factor is located.

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS**
171 New York Dairy Farms, 2013

| Milk Receipts Per Cow | Milk Receipts Per Cwt. | Operating Cost Milk Production Per Cow | Operating Cost Milk Production Per Cwt. | Total Cost Milk Production Per Cow | Total Cost Milk Production Per Cwt. | |
|--------------------------------------|------------------------|--|---|------------------------------------|-------------------------------------|--------------|
| (12) | (12) | (12) | (12) | (12) | (12) | |
| \$6,223 | \$23.52 | \$2,159 | \$13.06 | \$3,399 | \$17.86 | |
| 5,991 | 22.38 | 3,071 | 14.31 | 4,330 | 18.88 | |
| 5,767 | 22.10 | 3,470 | 14.93 | 4,667 | 19.58 | |
| 5,609 | 21.89 | 3,688 | 15.53 | 4,913 | 20.09 | |
| 5,459 | 21.70 | 3,940 | 16.31 | 5,051 | 20.73 | |
| ----- | | | | | | |
| 5,260 | 21.51 | 4,124 | 17.06 | 5,192 | 21.42 | |
| 4,995 | 21.31 | 4,290 | 17.67 | 5,382 | 22.44 | |
| 4,661 | 21.11 | 4,557 | 18.42 | 5,568 | 23.48 | |
| 4,066 | 20.83 | 4,803 | 19.33 | 5,902 | 24.77 | |
| 2,972 | 20.27 | 5,289 | 21.14 | 6,317 | 30.55 | |
| ----- | | | | | | |
| Profitability | | | | | | |
| Net Farm Income Without Appreciation | | | Net Farm Income With Appreciation | | Labor & Management Income | |
| Total | Per Cow | Operations Ratio | Total | Per Cow | Per Farm | Per Operator |
| (4) | (12) | (4) | (4) | (12) | (4) | (4) |
| \$2,293,718 | \$1,662 | 0.27 | \$2,875,086 | \$2,196 | \$1,658,986 | \$807,659 |
| 1,323,231 | 1,409 | 0.22 | 1,537,847 | 1,751 | 874,557 | 426,977 |
| 871,401 | 1,179 | 0.20 | 1,049,392 | 1,469 | 561,397 | 262,451 |
| 588,780 | 1,013 | 0.18 | 778,316 | 1,276 | 361,202 | 171,348 |
| 373,730 | 852 | 0.15 | 523,504 | 1,081 | 177,429 | 97,301 |
| ----- | | | | | | |
| 237,277 | 691 | 0.12 | 328,362 | 894 | 86,913 | 46,707 |
| 156,234 | 547 | 0.10 | 208,401 | 704 | 28,456 | 19,016 |
| 92,959 | 411 | 0.07 | 115,544 | 559 | -1,382 | -132 |
| 36,993 | 243 | 0.05 | 51,507 | 380 | -36,812 | -21,191 |
| -14,804 | -81 | -0.03 | -5,596 | -3 | -162,083 | -94,885 |

Farm Business Charts for farms with freestall barns and 200 cows or less, 200 to 500 cows, and more than 500 cows, and farms with conventional barns with less than 60 cows and equal to or more than 60 cows are shown on pages 35-39.

Financial Analysis Chart

The farm financial analysis chart on page 32 is designed just like the Farm Business Chart and may be used to assess the financial health of the farm business. Most of the financial measures used in the chart are defined on pages 8, 11, 15 and 22 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

FINANCIAL ANALYSIS CHART
171 New York Dairy Farms, 2013

| Liquidity (repayment) | | | | | | | |
|-------------------------------|------------------------------------|------------------------------|---------------------------|--|--|--|---------------|
| Planned Debt Payments Per Cow | Available for Debt Service Per Cow | Cash Flow Coverage Ratio | Debt Coverage Ratio | Debt Payments as Percent of Milk Sales | Debt Per Cow | Working Capital as % of Total Expenses | Current Ratio |
| (10)* | (16) | (10) | (10) | (10) | (7) | (7) | (7) |
| \$ 53 | \$1,585 | 9.83 | 12.79 | 0% | \$ 260 | 62% | 91.19 |
| 222 | 1,243 | 3.26 | 3.76 | 2 | 1,348 | 40 | 7.09 |
| 366 | 1,038 | 2.19 | 2.77 | 4 | 2,070 | 33 | 4.70 |
| 456 | 927 | 1.73 | 2.22 | 7 | 2,607 | 28 | 3.29 |
| 549 | 789 | 1.50 | 1.72 | 9 | 3,074 | 24 | 2.77 |
| ----- | | | | | | | |
| 641 | 661 | 1.23 | 1.38 | 10 | 3,514 | 20 | 2.40 |
| 730 | 521 | 0.98 | 1.06 | 11 | 3,972 | 16 | 1.97 |
| 852 | 418 | 0.76 | 0.82 | 14 | 4,428 | 10 | 1.47 |
| 1,086 | 204 | 0.48 | 0.38 | 16 | 5,196 | 5 | 1.13 |
| 1,917 | -448 | -1.71 | -0.72 | 21 | 6,854 | -8 | 0.61 |
| Solvency | | | | Operational Ratios | | | |
| Leverage Ratio** | Percent Equity | Debt/Asset Ratio | | Operating Expense Ratio | Interest Expense Ratio | Depreciation Expense Ratio | |
| | | Current & Intermediate | Long Term | | | | |
| (7) | (7) | (7) | (7) | (14) | (14) | (14) | |
| 0.02 | 98% | 0.02 | 0.00 | 0.65 | 0.00 | 0.03 | |
| 0.13 | 89 | 0.09 | 0.00 | 0.70 | 0.01 | 0.04 | |
| 0.23 | 82 | 0.15 | 0.06 | 0.72 | 0.01 | 0.04 | |
| 0.32 | 76 | 0.23 | 0.15 | 0.74 | 0.01 | 0.05 | |
| 0.39 | 72 | 0.27 | 0.25 | 0.76 | 0.02 | 0.06 | |
| ----- | | | | | | | |
| 0.49 | 68 | 0.32 | 0.34 | 0.79 | 0.02 | 0.06 | |
| 0.62 | 62 | 0.38 | 0.40 | 0.81 | 0.03 | 0.07 | |
| 0.76 | 57 | 0.42 | 0.47 | 0.84 | 0.03 | 0.08 | |
| 0.87 | 54 | 0.50 | 0.56 | 0.88 | 0.04 | 0.09 | |
| 1.61 | 41 | 0.67 | 0.81 | 0.94 | 0.06 | 0.13 | |
| Efficiency (Capital) | | | | | Profitability | | |
| Asset Turnover (ratio) | Real Estate Investment Per Cow | Machinery Investment Per Cow | Total Farm Assets Per Cow | Change in Net Worth With Appreciation | Percent Rate of Return with Appreciation on: | | |
| | | | | | Equity | Investment*** | |
| (14) | (14) | (14) | (14) | (8) | (4) | (4) | |
| 0.88 | \$2,155 | \$755 | \$6,982 | \$2,009,009 | 29% | 19% | |
| 0.73 | 2,989 | 1,109 | 8,484 | 1,003,640 | 20 | 14 | |
| 0.67 | 3,498 | 1,373 | 9,154 | 681,182 | 17 | 12 | |
| 0.62 | 3,913 | 1,629 | 9,860 | 440,826 | 14 | 10 | |
| 0.58 | 4,276 | 1,858 | 10,660 | 247,080 | 11 | 8 | |
| ----- | | | | | | | |
| 0.55 | 4,774 | 2,013 | 11,257 | 131,971 | 8 | 6 | |
| 0.52 | 5,265 | 2,259 | 11,917 | 79,692 | 5 | 5 | |
| 0.46 | 5,806 | 2,473 | 12,832 | 18,703 | 2 | 3 | |
| 0.39 | 6,721 | 2,865 | 14,119 | -5,034 | -1 | 1 | |
| 0.28 | 9,762 | 4,363 | 17,767 | -366,287 | -10 | -4 | |

*Page number of the participant's DFBS report where the factor is located.

**Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

***Return on all farm capital (no deduction for interest paid) divided by total farm assets

Comparison by Type of Barn and Herd Size

When analyzing a dairy farm business by comparing it to a group of farms, it is important that the group of farms have used as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the summary have been divided into those with freestall and those with conventional housing. Conventional housing includes stanchion and tiestall barns. Within each group, is a further classification by size of the dairy herd.

The table on page 34 includes the average values for the resulting five groups of dairy farms. The average size of farms in the five groups ranges from 46 cows on the small conventional farms to 1,097 cows on the largest freestall farms.

The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow as well as the highest returns to labor, management and capital.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 35-39. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance.

Herd Size Comparisons

A detailed comparison of profitability, financial situation and business analysis factors across herd sizes is contained on pages 48-60 of the 2013 State Summary*. In most years, as herd size increases, the net farm income increases (page 48)*; and that was the case for 2013. Net farm income without appreciation averaged \$25,437 per farm for the less than 60 cow farms and \$1,351,681 per farm for those with more than 900 cows. Return to all capital without appreciation generally increased as herd size increased. With herd sizes less than 200 cows, many farms find it difficult to find a low cost combination of technology and labor to produce milk. Thus profits are lower for these herds than other herd sizes.

Assets, liabilities and financial measures are presented on pages 55-58*. All herd size categories saw an increase in net worth during 2013. The largest herd size category experienced an increase in net worth of \$924,421. However, percent equity varied as herd size increased. The 900 and over herd size category had the lowest percent equity at 66 percent; while the less than 60 and 60 to 99 herd size categories averaged the highest percent equity at 77 percent.

Crop yields showed little relationship to herd size, but fertilizer and lime expenses, and machinery cost per tillable acre generally increased as herd size increased (pages 59-60)*. The farms with more than 900 cows averaged more milk sold per cow than any other size category (page 60). With 26,225 pounds of milk sold per cow, farms in the largest herd size group averaged 7.5 percent more milk output per cow than the average of all herds in the summary with less than 900 cows.

Farm capital per cow generally decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased. The farms with 100 cows or more averaged over 1,169,058 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 452,000 pounds per worker.

* Wayne A. Knoblauch, Cathryn Dymond, Jason Karszes, and Richard Kimmich, Dairy Farm Management Business Summary, New York State, 2013, Charles H. Dyson School of Applied Economics and Management, Cornell University, R.B. 2014-02, October 2014.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE

171 New York Dairy Farms, 2013

| Item | Farms with: | Tiestall/Stanchion | | Freestall | | |
|---|-------------|--------------------|-----------|------------|--------------|-------------|
| | | <= 60 Cows | >60 Cows | <=200 Cows | 201-500 Cows | ≥500 Cows |
| Number of farms | | 13 | 10 | 25 | 27 | 84 |
| <u>Cropping Program Analysis</u> | | | | | | |
| Total Tillable acres | | 193 | 301 | 363 | 680 | 2,087 |
| Tillable acres rented* | | 91 | 178 | 159 | 313 | 992 |
| Hay crop acres* | | 140 | 177 | 216 | 322 | 884 |
| Corn silage acres* | | 21 | 58 | 104 | 259 | 867 |
| Hay crop, tons DM/acre | | 1.6 | 1.8 | 2.5 | 3.3 | 3.7 |
| Corn silage, tons/acre | | 15.2 | 15.5 | 15.1 | 17.4 | 18.1 |
| Oats, bushels/acre | | 0 | 65 | 72 | 50 | 74 |
| Forage DM per cow, tons | | 8.0 | 8.6 | 9.3 | 8.4 | 8.4 |
| Tillable acres/cow | | 4.1 | 3.5 | 2.9 | 2.0 | 1.9 |
| Fertilizer & lime expense/tillable acre | | \$33.97 | \$68.66 | \$54.86 | \$83.02 | \$77.22 |
| Total machinery costs | | \$45,541 | \$84,103 | \$125,551 | \$334,055 | \$986,915 |
| Machinery cost/tillable acre | | \$238 | \$279 | \$342 | \$488 | \$462 |
| <u>Dairy Analysis</u> | | | | | | |
| Number of cows | | 46 | 85 | 127 | 343 | 1,097 |
| Number of heifers | | 35 | 71 | 101 | 276 | 953 |
| Milk sold, lbs. | | 790,724 | 1,832,536 | 2,613,050 | 8,647,161 | 28,629,982 |
| Milk sold/cow, lbs. | | 17,276 | 21,483 | 20,556 | 25,210 | 26,098 |
| Operating cost of producing milk/cwt. | | \$15.66 | \$15.83 | \$17.15 | \$17.06 | \$16.52 |
| Total cost of producing milk/cwt. | | \$27.70 | \$22.62 | \$23.27 | \$21.23 | \$20.02 |
| Price/cwt. milk sold | | \$21.45 | \$21.18 | \$21.77 | \$21.73 | \$21.64 |
| Purchased dairy feed/cow | | \$1,068 | \$1,446 | \$1,472 | \$1,985 | \$1,964 |
| Purchased dairy feed/cwt. milk | | \$6.18 | \$6.73 | \$8.85 | \$7.87 | \$7.53 |
| Purchased grain & concentrate as % of milk receipts | | 27% | 29% | 32% | 33% | 33% |
| Purchased feed & crop expense/cwt milk | | \$7.33 | \$8.51 | \$8.85 | \$9.11 | \$8.83 |
| <u>Capital Efficiency</u> | | | | | | |
| Farm capital/worker | | \$340,187 | \$314,853 | \$412,594 | \$414,822 | \$494,969 |
| Farm capital/cow | | \$15,608 | \$11,000 | \$12,139 | \$10,461 | \$10,612 |
| Farm capital/tillable acre owned | | \$6,978 | \$7,597 | \$7,591 | \$9,771 | \$10,624 |
| Real estate/cow | | \$8,595 | \$4,548 | \$5,508 | \$4,247 | \$4,325 |
| Machinery investment/cow | | \$3,279 | \$2,364 | \$2,328 | \$2,006 | \$1,735 |
| Asset turnover ratio | | 0.30 | 0.51 | 0.42 | 0.62 | 0.62 |
| <u>Labor Efficiency</u> | | | | | | |
| Worker equivalent | | 2.10 | 2.97 | 3.74 | 8.65 | 23.52 |
| Operator/manager equivalent | | 1.21 | 1.63 | 1.36 | 1.88 | 2.41 |
| Milk sold/worker, lbs. | | 376,237 | 616,151 | 699,456 | 999,961 | 1,217,261 |
| Cows/worker | | 22 | 29 | 34 | 40 | 47 |
| Labor cost/cow | | \$1,199 | \$1,070 | \$810 | \$856 | \$815 |
| Labor cost/tillable acre | | \$284 | \$303 | \$284 | \$431 | \$429 |
| <u>Profitability & Balance Sheet Analysis</u> | | | | | | |
| Net farm income (without appreciation) | | \$29,450 | \$72,696 | \$77,264 | \$264,116 | \$1,044,477 |
| Labor & management income/operator | | \$-2,780 | \$17,243 | \$10,485 | \$71,814 | \$270,468 |
| Rate return on all capital with appreciation | | 0.9% | 3.7% | 2.8% | 9.1% | 10.6% |
| Farm debt/cow | | \$3,152 | \$3,217 | \$3,003 | \$3,148 | \$3,561 |
| Percent equity | | 80% | 73% | 76% | 72% | 67% |

*Average of all farms, not only those reporting data.

FARM BUSINESS CHART FOR SMALL TIESTALL/STANCHION DAIRY FARMS
13 Tiestall/Stanchion Dairy Farms with 60 or Less Cows, New York, 2013

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | 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)* | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 3.46 | 56 | 1,107,897 | 24,207 | 2.7 | 19 | 27 | 541,836 |
| 2.17 | 51 | 960,743 | 20,546 | 2.2 | 18 | 26 | 516,533 |
| 2.00 | 47 | 865,621 | 17,828 | 1.9 | 16 | 25 | 434,512 |
| 1.80 | 43 | 692,338 | 15,008 | 1.4 | 10 | 22 | 323,855 |
| 1.56 | 37 | 489,420 | 12,090 | 0.7 | 0 | 18 | 249,497 |

| 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) | |
| \$429 | 14% | \$482 | \$1,540 | \$626 | \$4.64 | |
| 946 | 25 | 766 | 1,944 | 1,126 | 6.58 | |
| 1,072 | 29 | 1,091 | 2,326 | 1,265 | 7.66 | |
| 1,301 | 33 | 1,275 | 2,585 | 1,690 | 8.69 | |
| 1,604 | 40 | 1,437 | 2,797 | 1,891 | 9.38 | |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--|--------------------------------|--------------------------------------|---------|-----------------------------------|------------------------------------|
| Milk Receipts Per Cow | Operating Cost Producing Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Income Per Operator | Change in Net Worth w/Appreciation |
| (12) | (12) | (12) | Total | Per Cow | (4) | (8) |
| \$5,179 | \$12.43 | \$21.75 | \$67,973 | \$1,345 | \$35,038 | \$114,591 |
| 4,454 | 14.08 | 25.08 | 47,346 | 1,078 | 13,655 | 55,745 |
| 3,806 | 15.36 | 28.69 | 35,926 | 734 | 5,340 | 11,833 |
| 3,230 | 17.49 | 33.80 | 22,936 | 502 | -12,587 | 7,668 |
| 2,515 | 21.99 | 39.80 | -8,125 | -203 | -38,785 | -14,229 |

*Page number of the participant's DFBS report where the factor is located.

FARM BUSINESS CHART FOR LARGE TIESTALL/STANCHION DAIRY FARMS
10 Tiestall/Stanchion Dairy Farms with 60 or More Cows, New York, 2013

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | 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)* | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 4.16 | 127 | 3,057,738 | 26,350 | 3.4 | 22 | 48 | 971,679 |
| 3.67 | 88 | 1,800,277 | 22,660 | 2.8 | 17 | 33 | 701,912 |
| 2.95 | 74 | 1,544,981 | 21,339 | 2.4 | 16 | 31 | 614,768 |
| 2.40 | 72 | 1,508,254 | 19,425 | 1.9 | 14 | 24 | 521,095 |
| 1.71 | 67 | 1,251,433 | 16,325 | 0.0 | 0 | 20 | 415,908 |

| 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) | |
| \$923 | 22% | \$646 | \$1,332 | \$1,214 | \$5.90 | |
| 1,178 | 25 | 861 | 1,641 | 1,495 | 7.10 | |
| 1,279 | 27 | 999 | 2,045 | 1,572 | 8.01 | |
| 1,352 | 32 | 1,101 | 2,406 | 1,958 | 9.52 | |
| 1,799 | 41 | 1,268 | 2,840 | 2,670 | 11.47 | |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--|--------------------------------|--------------------------------------|--------------|-----------------------------------|------------------------------------|
| Milk Receipts Per Cow | Operating Cost Producing Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Income Per Operator | Change in Net Worth w/Appreciation |
| (12) | (12) | (12) | Total (4) | Per Cow (12) | (4) | (8) |
| \$5,624 | \$11.89 | \$18.73 | \$179,215 | \$1,709 | \$79,003 | \$118,436 |
| 4,859 | 14.29 | 21.08 | 108,787 | 1,189 | 29,455 | 86,741 |
| 4,559 | 16.62 | 24.18 | 45,205 | 672 | 15,568 | 20,360 |
| 4,169 | 18.39 | 24.79 | 27,200 | 378 | -10,367 | 12,371 |
| 3,320 | 19.92 | 27.38 | 3,073 | 34 | -23,008 | -2,819 |

*Page number of the participant's DFBS report where the factor is located.

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS

25 Freestall Barn Dairy Farms with 200 Cows or less, New York, 2013

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | 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)* | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 8.54 | 198 | 5,182,611 | 26,978 | 4.8 | 26 | 66 | 1,189,312 |
| 5.65 | 184 | 4,108,652 | 25,637 | 3.9 | 24 | 51 | 945,040 |
| 5.11 | 172 | 3,486,569 | 23,481 | 3.4 | 21 | 44 | 822,454 |
| 3.84 | 156 | 3,057,254 | 22,894 | 3.2 | 20 | 39 | 813,049 |
| 3.55 | 135 | 2,674,287 | 21,941 | 3.1 | 19 | 37 | 780,801 |
| 3.28 | 121 | 2,499,886 | 21,262 | 3.0 | 16 | 35 | 723,986 |
| 3.02 | 113 | 2,324,455 | 18,961 | 2.7 | 15 | 33 | 662,604 |
| 2.73 | 105 | 1,996,233 | 17,204 | 2.2 | 13 | 30 | 626,628 |
| 2.36 | 92 | 1,543,980 | 16,229 | 1.7 | 7 | 29 | 523,811 |
| 1.97 | 66 | 1,071,282 | 13,489 | 0.4 | 0 | 24 | 450,287 |

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) |
| \$810 | 22% | \$440 | \$955 | \$1,130 | \$6.59 |
| 1,125 | 26 | 687 | 1,432 | 1,466 | 7.38 |
| 1,242 | 29 | 726 | 1,524 | 1,666 | 8.30 |
| 1,369 | 32 | 800 | 1,645 | 1,765 | 8.57 |
| 1,428 | 34 | 887 | 1,757 | 1,833 | 8.94 |
| 1,520 | 35 | 942 | 1,837 | 1,928 | 9.24 |
| 1,603 | 35 | 1,030 | 1,970 | 2,008 | 9.79 |
| 1,642 | 39 | 1,122 | 2,080 | 2,052 | 10.29 |
| 1,838 | 41 | 1,327 | 2,204 | 2,352 | 11.21 |
| 2,109 | 42 | 1,556 | 2,498 | 2,536 | 14.67 |

Value and Cost of Production**Profitability**

| Milk Receipts Per Cow | Operating Cost Producing Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Income Per Operator | Change in Net Worth w/Appreciation |
|-----------------------|--|--------------------------------|--------------------------------------|---------|-----------------------------------|------------------------------------|
| (12) | (12) | (12) | Total | Per Cow | (4) | (8) |
| \$5,805 | \$13.62 | \$19.71 | \$214,078 | \$1,381 | \$94,226 | \$224,269 |
| 5,411 | 14.47 | 21.15 | 175,114 | 1,147 | 67,023 | 168,631 |
| 5,108 | 15.58 | 21.66 | 134,065 | 1,079 | 44,869 | 111,075 |
| 5,045 | 16.23 | 22.96 | 119,630 | 898 | 34,128 | 89,941 |
| 4,652 | 17.41 | 23.89 | 104,117 | 789 | 20,833 | 78,262 |
| 4,531 | 18.83 | 24.41 | 78,069 | 646 | 10,324 | 34,995 |
| 4,242 | 19.41 | 25.64 | 51,551 | 502 | 3,964 | 3,699 |
| 3,839 | 20.89 | 25.95 | 26,617 | 183 | -18,167 | -8,284 |
| 3,490 | 21.53 | 26.60 | 9,167 | 70 | -26,662 | -15,825 |
| 3,067 | 23.01 | 32.80 | -19,540 | -256 | -64,814 | -61,809 |

*Page number of the participant's DFBS report where the factor is located.

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
27 Freestall Barn Dairy Farms with 201-500 Cows, New York, 2013

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | 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)* | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 14.77 | 477 | 12,550,700 | 28,870 | 4.9 | 25 | 58 | 1,401,737 |
| 13.33 | 455 | 12,081,379 | 27,886 | 4.5 | 21 | 53 | 1,276,640 |
| 11.57 | 432 | 11,553,406 | 27,392 | 4.4 | 20 | 51 | 1,249,662 |
| 9.58 | 410 | 10,862,817 | 26,650 | 4.3 | 20 | 48 | 1,158,356 |
| 9.10 | 383 | 9,813,488 | 26,112 | 3.8 | 18 | 45 | 1,110,327 |
| 7.86 | 354 | 8,623,972 | 25,635 | 3.2 | 17 | 43 | 1,041,951 |
| 7.27 | 306 | 7,590,141 | 24,278 | 2.8 | 17 | 39 | 968,549 |
| 6.76 | 274 | 6,873,567 | 23,375 | 2.2 | 15 | 35 | 901,880 |
| 6.28 | 243 | 5,605,715 | 21,583 | 2.1 | 14 | 32 | 813,061 |
| 4.52 | 208 | 4,331,094 | 20,234 | 1.1 | 4 | 26 | 651,527 |

| 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) |
| \$1,397 | 26% | \$519 | \$1,173 | \$1,851 | \$7.64 |
| 1,546 | 29 | 720 | 1,476 | 1,980 | 8.12 |
| 1,590 | 31 | 815 | 1,594 | 2,095 | 8.28 |
| 1,653 | 31 | 933 | 1,780 | 2,158 | 8.65 |
| 1,762 | 32 | 996 | 1,865 | 2,219 | 9.17 |
| 1,855 | 34 | 1,082 | 1,959 | 2,335 | 9.49 |
| 1,938 | 35 | 1,143 | 2,045 | 2,475 | 10.00 |
| 1,995 | 38 | 1,198 | 2,123 | 2,568 | 10.08 |
| 2,081 | 40 | 1,249 | 2,266 | 2,620 | 10.73 |
| 2,304 | 42 | 1,472 | 2,414 | 2,878 | 11.30 |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--|--------------------------------|--------------------------------------|---------|-----------------------------------|------------------------------------|
| Milk Receipts Per Cow | Operating Cost Producing Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Income Per Operator | Change in Net Worth w/Appreciation |
| | | | Total | Per Cow | | |
| (12) | (12) | (12) | (4) | (12) | (4) | (8) |
| \$6,412 | \$12.87 | \$18.08 | \$634,175 | \$1,802 | \$349,137 | \$820,315 |
| 6,089 | 14.33 | 19.21 | 548,498 | 1,446 | 215,578 | 496,142 |
| 5,990 | 14.91 | 19.78 | 460,254 | 1,313 | 139,493 | 402,840 |
| 5,791 | 15.98 | 20.25 | 394,614 | 1,169 | 114,077 | 320,293 |
| 5,591 | 17.21 | 21.18 | 269,957 | 867 | 92,263 | 265,454 |
| 5,470 | 17.76 | 22.24 | 212,745 | 608 | 49,457 | 214,014 |
| 5,300 | 18.52 | 22.91 | 185,326 | 545 | 27,034 | 151,222 |
| 4,940 | 19.81 | 23.29 | 134,985 | 459 | 8,785 | 108,126 |
| 4,696 | 20.12 | 23.64 | 92,762 | 239 | -14,090 | 43,970 |
| 4,383 | 20.59 | 24.50 | -8,631 | -24 | -83,573 | -224 |

*Page number of the participant's DFBS report where the factor is located.

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
84 Freestall Barn Dairy Farms with 500 or More Cows, New York, 2013

| Size of Business | | | Rates 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)* | (12) | (12) | (12) | (11) | (11) | (14) | (14) |
| 48.18 | 2,383 | 64,332,803 | 29,179 | 5.6 | 24 | 60 | 1,630,655 |
| 33.09 | 1,641 | 41,898,886 | 27,625 | 4.9 | 22 | 54 | 1,438,723 |
| 27.36 | 1,283 | 34,752,619 | 27,280 | 4.5 | 21 | 51 | 1,316,944 |
| 25.38 | 1,145 | 29,300,359 | 26,861 | 4.2 | 20 | 49 | 1,243,736 |
| 22.71 | 1,033 | 26,938,645 | 26,391 | 3.9 | 19 | 47 | 1,200,316 |
| ----- | | | | | | | |
| 20.30 | 938 | 24,566,699 | 26,068 | 3.7 | 18 | 45 | 1,176,314 |
| 18.61 | 834 | 21,980,430 | 25,460 | 3.4 | 17 | 43 | 1,130,905 |
| 17.09 | 722 | 18,454,170 | 24,866 | 3.2 | 16 | 42 | 1,089,213 |
| 14.41 | 648 | 16,301,578 | 24,217 | 2.7 | 14 | 40 | 1,024,313 |
| 12.06 | 549 | 13,330,311 | 22,272 | 1.8 | 9 | 35 | 867,591 |
| ----- | | | | | | | |
| 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) | | |
| \$1,310 | 25% | \$595 | \$1,256 | \$1,728 | \$7.20 | | |
| 1,572 | 28 | 732 | 1,487 | 1,982 | 7.78 | | |
| 1,673 | 30 | 790 | 1,591 | 2,125 | 8.23 | | |
| 1,759 | 31 | 853 | 1,672 | 2,190 | 8.55 | | |
| 1,830 | 33 | 911 | 1,705 | 2,286 | 8.85 | | |
| ----- | | | | | | | |
| 1,886 | 34 | 951 | 1,750 | 2,356 | 9.12 | | |
| 1,942 | 35 | 977 | 1,827 | 2,424 | 9.35 | | |
| 2,024 | 36 | 1,033 | 1,917 | 2,510 | 9.65 | | |
| 2,122 | 38 | 1,117 | 2,028 | 2,635 | 9.84 | | |
| 2,368 | 40 | 1,309 | 2,218 | 2,883 | 10.43 | | |
| ----- | | | | | | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Operating Cost Producing Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Income Per Operator | Change in Net Worth w/Appreciation | |
| (12) | (12) | (12) | Total | Per Cow | (4) | (8) | |
| \$6,269 | \$13.75 | \$17.61 | \$2,935,571 | \$1,710 | \$989,685 | \$2,511,238 | |
| 6,101 | 14.52 | 18.48 | 1,741,280 | 1,484 | 585,613 | 1,590,073 | |
| 5,968 | 15.21 | 18.97 | 1,458,569 | 1,329 | 454,127 | 1,117,485 | |
| 5,826 | 15.74 | 19.52 | 1,220,876 | 1,156 | 399,604 | 896,084 | |
| 5,721 | 16.49 | 19.87 | 996,019 | 1,015 | 290,737 | 755,529 | |
| ----- | | | | | | | |
| 5,623 | 17.05 | 20.29 | 800,145 | 869 | 218,982 | 591,616 | |
| 5,507 | 17.57 | 20.83 | 668,442 | 745 | 179,204 | 436,312 | |
| 5,363 | 18.07 | 21.51 | 489,892 | 578 | 106,230 | 211,942 | |
| 5,122 | 18.67 | 22.19 | 306,009 | 400 | 13,934 | 23,231 | |
| 4,799 | 19.77 | 23.79 | 148,587 | 180 | -104,180 | -511,443 | |

*Page number of the participant's DFBS report where the factor is located.

Worksheet for Setting Goals (Continued)

| II. Goals | How | When | Who is Responsible |
|-----------|-------|-------|--------------------|
| What | | | |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
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| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 26 and 30-32 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 5)

Accrual Receipts - (defined on page 6)

Annual Cash Flow Statement - (defined on page 13)

Appreciation - (defined on page 7)

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

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

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

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

Cash Flow Coverage Ratio - (defined on page 15)

Cash Paid - (defined on page 4)

Cash Receipts - (defined on page 6)

Change in Accounts Payable - (defined on page 5)

Change in Accounts Receivable - (defined on page 6)

Change in Inventory - (defined on page 4)

Culling Rate - Culling rate is calculated by dividing the number of animals that left the herd for culling purposes and that died, by the average number of milking and dry cows for the year.

Current Portion - (defined on page 9)

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.

Death Rate - The number of animals that died divided by the average number of milking and dry cows for the year.

Debt Coverage Ratio - (defined on page 15)

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

Debt to Asset Ratios - (defined on page 11)

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 15.

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. This measure of repayment ability is used in the Financial Analysis Chart.

Financial Lease - A long-term non-cancellable 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 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.

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.

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 8)

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 11)

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

Net Farm Income - (defined on page 7)

Net Farm Income from Operations Ratio - (defined on page 9)

Net Milk Receipts – Accrual milk receipts less milk marketing 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 21)

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

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

Other Livestock Expenses - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bST, 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 21)

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 9)

Return on Total Capital - (defined on page 9)

Sell Rate – The number of animals that were sold for culling purposes divided by the average number of milking and dry cows for the year.

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

Total Costs of Producing Milk - (defined on page 21)

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

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

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| 2015-07 | Dairy Farm Business Summary, Hudson and Central New York Region, 2014 | (\$16.00) | Knoblauch, W.A., Dymond, C., Karszes, J., Howland, E., Buxton, S., Kiraly, M., Kimmich, R. and K. Shoen |
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