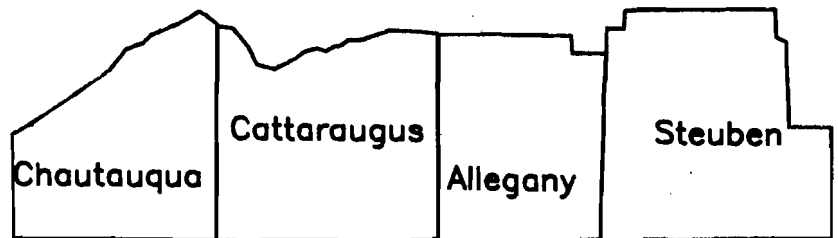


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# DAIRY FARM BUSINESS SUMMARY

## WESTERN PLATEAU REGION 1993



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# 1993 DAIRY FARM BUSINESS SUMMARY

## WESTERN PLATEAU REGION

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# 1993 DAIRY FARM BUSINESS SUMMARY WESTERN PLATEAU REGION\*

## INTRODUCTION

Dairy farmers throughout New York State have been participating in Cornell Cooperative Extension's farm business summary and analysis program since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of the farm business. The information in this report represents an average of the data submitted from dairy farms in the Western Plateau Region for 1993.

### Program Objective

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

### Format Features

This regional report follows the same general format as in the 1993 DFBS printout received by all participating dairy farmers. The analysis tables have an open column or section labeled My Farm. It may be used by any dairy farm manager who wants to compare his or her business with the average data of this region. A DFBS Data Check-in Form can be used by non-DFBS participants to summarize their businesses.

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; and
- (7) a capital and labor efficiency analysis.

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\*This summary was prepared by George L. Casler, Department of Agricultural, Resource, and Managerial Economics, College of Agriculture and Life Science, Cornell University, in cooperation with Cooperative Extension Agents Andrew Dufresne, Joan Petzen, and Carl Albers. Stuart Smith was in charge of data collection in Steuben County. The Western Plateau region is comprised of Allegany, Cattaraugus, Chautauqua, and Steuben Counties. Linda Putnam was in charge of the data handling at Cornell.

**SUMMARY AND ANALYSIS OF THE FARM BUSINESS**

**Business Characteristics**

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

**BUSINESS CHARACTERISTICS**  
37 Western Plateau Region Dairy Farms, 1993

| <u>Type of Farm</u>           | <u>Number</u> | <u>Type of Barn</u>       | <u>Number</u> |
|-------------------------------|---------------|---------------------------|---------------|
| Dairy                         | 37            | Stanchion/Tie-Stall       | 19            |
| Part-time dairy               | 0             | Freestall                 | 13            |
| Dairy cash-crop               | 0             | Combination               | 5             |
| Part-time cash-crop dairy     | 0             |                           |               |
|                               |               | <u>Milking System</u>     | <u>Number</u> |
| <u>Type of Ownership</u>      | <u>Number</u> | Bucket & carry            | 0             |
| Owner                         | 36            | Dumping station           | 0             |
| Renter                        | 1             | Pipeline                  | 21            |
|                               |               | Herringbone parlor        | 14            |
| <u>Type of Business</u>       | <u>Number</u> | Other parlor              | 2             |
| Single proprietorship         | 24            | <u>Milking Frequency</u>  | <u>Number</u> |
| Partnership                   | 11            | 2x/day                    | 32            |
| Corporation                   | 2             | 3x/day                    | 3             |
|                               |               | Other                     | 2             |
| <u>Business Record System</u> | <u>Number</u> | <u>Production Records</u> | <u>Number</u> |
| ELFAC II                      | 2             | DHIC                      | 24            |
| Account Book                  | 16            | Owner-Sampler             | 4             |
| Agrifax (mail-in only)        | 6             | Other                     | 5             |
| On-Farm Computer              | 9             | None                      | 4             |
| Other                         | 4             |                           |               |

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

**Income Statement**

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

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 1993.

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

**CASH AND ACCRUAL FARM EXPENSES**  
37 Western Plateau Region Dairy Farms, 1993

| <u>Expense Item</u>           | Cash<br>Paid + | Change in<br>Inventory<br>or Prepaid<br>Expense + | Change in<br>Accounts<br>Payable = | Accrual<br>Expenses |
|-------------------------------|----------------|---|------------------------------------|---------------------|
| <u>Hired Labor</u>            | \$24,087       | \$0 <<  | \$92                               | \$24,179            |
| <u>Feed</u>                   |                |   |                                    |                     |
| Dairy grain & conc.           | 63,510         | 1,101   | 411                                | 65,022              |
| Dairy roughage                | 2,659          | -18   | 0                                  | 2,641               |
| Nondairy                      | 0              | 0   | 0                                  | 0                   |
| <u>Machinery</u>              |                |   |                                    |                     |
| Mach. hire, rent/lease        | 2,587          | 0 <<  | 0                                  | 2,587               |
| Machinery repairs/parts       | 14,212         | 5   | -162                               | 14,055              |
| Auto exp. (farm share)        | 1,501          | 0 <<  | 0                                  | 1,501               |
| Fuel, oil & grease            | 5,826          | -10   | 45                                 | 5,861               |
| <u>Livestock</u>              |                |   |                                    |                     |
| Replacement livestock         | 2,627          | 0 <<  | 0                                  | 2,627               |
| Breeding                      | 3,554          | -84   | 19                                 | 3,489               |
| Vet & medicine                | 5,326          | -11   | -55                                | 5,260               |
| Milk marketing                | 11,996         | 0 <<  | 0                                  | 11,996              |
| Cattle lease/rent             | 132            | 0 <<  | 0                                  | 132                 |
| Other livestock expense       | 10,383         | 31  | -93                                | 10,321              |
| <u>Crops</u>                  |                |   |                                    |                     |
| Fertilizer & lime             | 5,052          | 261   | 302                                | 5,615               |
| Seeds & plants                | 3,211          | 58  | 32                                 | 3,301               |
| Spray, other crop exp.        | 2,505          | 27  | -67                                | 2,465               |
| <u>Real Estate</u>            |                |   |                                    |                     |
| Land/bldg./fence repair       | 3,152          | 105   | 122                                | 3,379               |
| Taxes                         | 6,249          | 0 <<  | -228                               | 6,021               |
| Rent & lease                  | 4,288          | 0 <<  | 143                                | 4,431               |
| <u>Other</u>                  |                |   |                                    |                     |
| Insurance                     | 3,951          | 0 <<  | 141                                | 4,092               |
| Telephone (farm share)        | 355            | 0 <<  | 0                                  | 355                 |
| Electricity (farm share)      | 5,774          | 0 <<  | 0                                  | 5,774               |
| Interest paid                 | 10,961         | 0 <<  | 0                                  | 10,961              |
| Miscellaneous                 | 3,004          | 91  | 78                                 | 3,173               |
| Total Operating               | \$196,902      | \$1,556   | \$780                              | \$199,238           |
| Expansion livestock           | 2,507          | 0 <<  | 0                                  | 2,507               |
| Machinery depreciation        |                |   |                                    | 13,257              |
| Building depreciation         |                |   |                                    | 6,443               |
| <b>TOTAL ACCRUAL EXPENSES</b> |                |   |                                    | <b>\$221,445</b>    |

Change in prepaid expenses (noted above by <<) is a net change in non-inventory expenses that have been paid in advance of their use. If 1993 funds used to prepay 1994 leases exceed the amount of 1993 leases prepaid in 1992, the amount of this excess is entered as a negative number to exclude it from 1993 accrual lease expenses. The excess prepaid lease is charged against the future year's business operation. A decrease in prepaid lease is added to accrual expenses because it represents use of resources during this year that were paid for in past years.

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 1993 but not paid for. A decrease is subtracted because the resource was used before 1993.

Accrual expenses are the costs of inputs actually used in this year's production. They are the total of cash paid, as well as changes in inventory, prepaid expenses, and accounts payable.

**CASH AND ACCRUAL FARM RECEIPTS**  
37 Western Plateau Region Dairy Farms, 1993

| <u>Receipt Item</u>         | Cash<br>Receipts | + Change in<br>Inventory | + Change in<br>Accounts<br>Receivable | = Accrual<br>Receipts |
|-----------------------------|------------------|--------------------------|---------------------------------------|-----------------------|
| Milk sales                  | \$206,596        |                          | \$1,725                               | \$208,321             |
| Dairy cattle                | 16,140           | \$4,988                  | 0                                     | 21,128                |
| Dairy calves                | 4,302            |                          | 0                                     | 4,302                 |
| Other livestock             | 208              | -231                     | 0                                     | -23                   |
| Crops                       | 786              | 3,975                    | 0                                     | 4,761                 |
| Government receipts         | 5,411            | 0*                       | 0                                     | 5,411                 |
| Custom machine work         | 579              |                          | 5                                     | 584                   |
| Gas tax refund              | 583              |                          | 0                                     | 583                   |
| Other                       | <u>3,825</u>     |                          | <u>54</u>                             | <u>3,879</u>          |
| Less nonfarm noncash cap.** |                  | (-) <u>16</u>            |                                       | (-) <u>16</u>         |
| <b>Total Receipts</b>       | <b>\$238,430</b> | <b>\$8,716</b>           | <b>\$1,784</b>                        | <b>\$248,930</b>      |

\*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 annual increase in advanced government receipts is subtracted from cash income because it represents income received in 1993 for the 1994 crop year in excess of funds earned for 1993. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1993 but received in 1992.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. The January milk check for this December's marketings compared with the previous January's check is included as a change in accounts receivable.

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

### Profitability Analysis

Farm operators\* 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.

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\*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, financing, and owning 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

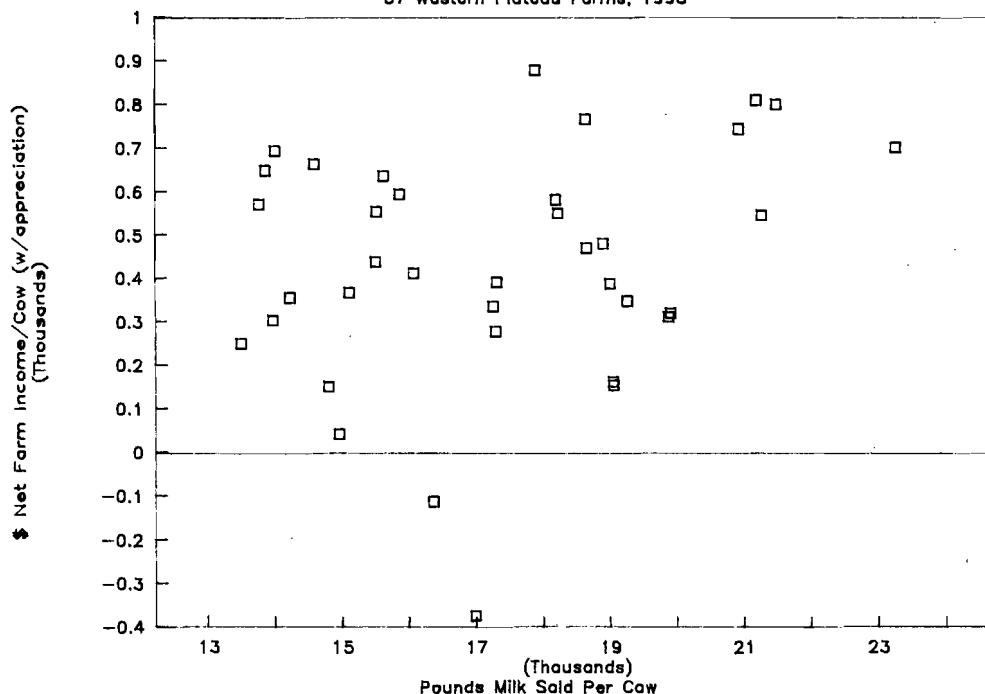
37 Western Plateau Region Dairy Farms, 1993

| Item                                   | Average   | My Farm  |
|--|-----------|----------|
| Total accrual receipts                 | \$248,930 | \$ _____ |
| Appreciation: Livestock                | 865       | _____    |
| Machinery                              | 1,246     | _____    |
| Real Estate                            | 5,940     | _____    |
| Other Stock/Certificates               | 1,097     | _____    |
| Total Including Appreciation           | \$258,078 | \$ _____ |
| Total accrual expenses                 | - 221,445 | - _____  |
| Net Farm Income (with appreciation)    | \$36,633  | \$ _____ |
| Net Farm Income (without appreciation) | \$27,485  | \$ _____ |

The chart below shows the relationship between net farm income per cow (with appreciation) and pounds of milk sold per cow. Generally, farms with a higher production per cow have higher profitability per cow.

#### Net Farm Income/Cow and Milk/Cow

37 Western Plateau Farms, 1993





Return to operators' labor, management, and equity capital measures the total net farm income for the farm operator(s). It is calculated by deducting a charge for unpaid family labor from net farm income. Operators' labor is not included in unpaid family labor. Return to operators' labor, management, and equity capital has been calculated both with and without appreciation. Appreciation is an important part of the return to ownership of farm assets.

**RETURN TO OPERATORS' LABOR, MANAGEMENT, AND EQUITY**

37 Western Plateau Region Dairy Farms, 1993

| Item  | Average         |                    | My Farm         |                    |
|---|-----------------|--------------------|-----------------|--------------------|
|   | With<br>Apprec. | Without<br>Apprec. | With<br>Apprec. | Without<br>Apprec. |
| Net farm income                                     | \$36,633        | \$27,485           | \$_____         | \$_____            |
| Family labor unpaid<br>@ \$1,400 per month          | - 3,444         | - 3,444            | -_____          | -_____             |
| Return to operators' labor,<br>management, & equity | \$33,189        | \$24,041           | \$_____         | \$_____            |

Labor and management income is the return which farm operators receive for their labor and management used in operating 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 the opportunity cost of using equity capital, at a real interest rate of five percent, from the return to operators' labor, management, and equity capital 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**

37 Western Plateau Region Farms, 1993

| Item   | Average  | My Farm |
|--|----------|---------|
| Return to operators' labor, management,<br>& equity without appreciation | \$24,041 | \$_____ |
| Real interest @ 5% on \$368,353<br>average equity capital                | - 18,418 | -_____  |
| Labor & Management Income  | \$5,623  | \$_____ |
| Labor & Management Income per<br>1.62 Operator/Manager                   | \$3,471  | \$_____ |

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

**RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL**  
37 Western Plateau Region Dairy Farms, 1993

| <u>Item</u>   | <u>Average</u> | <u>My Farm</u> |
|---|----------------|----------------|
| Return to operators' labor, management,<br>& equity capital with appreciation | \$33,189       | \$ _____       |
| Value of operators' labor & management  | - 33,284       | - _____        |
| Return on equity capital with appreciation                                    | \$-95          | \$ _____       |
| Interest paid   | +10,961        | + _____        |
| Return on total capital with appreciation                                     | \$10,866       | \$ _____       |
| Return on equity capital without appreciation                                 | \$-9,243       | \$ _____       |
| Return on total capital without appreciation                                  | \$1,718        | \$ _____       |
| Rate of return on average equity capital:                                     |                |                |
| with appreciation   | -.03%          | _____ %        |
| without appreciation  | -2.51%         | _____ %        |
| Rate of return on average total capital:                                      |                |                |
| with appreciation   | 1.97%          | _____ %        |
| without appreciation  | .31%           | _____ %        |

**Farm and Family Financial Status**

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies 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 1993, leases were discounted by 7.75 percent.

Advanced government receipts are included as current liabilities. Government payments received in 1993 that are for participation in the 1994 program are the end year balance and payments received in 1992 for participation in the 1993 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.

**1993 FARM BUSINESS & NONFARM BALANCE SHEET**  
 37 Western Plateau Region Dairy Farms, 1993

| <u>Farm Assets</u>            |                  |                  | <u>Farm Liabilities &amp; Net Worth</u> |                  |                  |
|-------------------------------|------------------|------------------|---|------------------|------------------|
|                               | <u>Jan. 1</u>    | <u>Dec. 31</u>   |   | <u>Jan. 1</u>    | <u>Dec. 31</u>   |
| <u>Current</u>                |                  |                  | <u>Current</u>                          |                  |                  |
| Farm cash, checking & savings | \$4,327          | \$3,638          | Accounts payable                        | \$9,346          | \$10,125         |
| Accounts rec.                 | 14,213           | 15,998           | Operating debt                          | 2,303            | 2,447            |
| Prepaid exp.                  | 0                | 0                | Short-term                              | 1,561            | 1,719            |
| Feed & supplies               | 36,708           | 39,126           | Advanced govt. rec.                     | 0                | 0                |
|                               |                  |                  | Current Portion:                        |                  |                  |
|                               |                  |                  | Intermediate                            | 0                | 19,526           |
|                               |                  |                  | Long Term                               | 0                | 5,438            |
| <b>Total</b>                  | <b>\$55,248</b>  | <b>\$58,762</b>  | <b>Total</b>                            | <b>\$13,210</b>  | <b>\$39,255</b>  |
| <u>Intermediate</u>           |                  |                  | <u>Intermediate</u>                     |                  |                  |
| <u>Dairy cows:</u>            |                  |                  | <u>Structured debt</u>                  |                  |                  |
| owned                         | \$96,137         | \$100,367        | 1-10 years                              | \$91,987         | \$69,247         |
| leased                        | 190              | 46               | Financial lease                         |                  |                  |
| Heifers                       | 48,297           | 49,899           | (cattle/mach.)                          | 3,748            | 3,707            |
| Bulls/other lvstk.            | 1,291            | 1,082            | Farm Credit stock                       | 2,426            | 2,287            |
| Mach./eq. owned               | 117,695          | 119,013          |   |                  |                  |
| Mach./eq. leased              | 3,558            | 3,661            | <b>Total</b>                            | <b>\$98,161</b>  | <b>\$75,241</b>  |
| Farm Credit stock             | 2,426            | 2,287            |   |                  |                  |
| Other stock/cert.             | 5,367            | 6,419            |   |                  |                  |
|                               |                  |                  |   |                  |                  |
| <b>Total</b>                  | <b>\$274,961</b> | <b>\$282,774</b> |   |                  |                  |
| <u>Long-Term</u>              |                  |                  | <u>Long Term</u>                        |                  |                  |
| <u>Land/buildings:</u>        |                  |                  | <u>Structured debt</u>                  |                  |                  |
| owned                         | \$210,931        | \$218,792        | >10 yrs                                 | \$68,786         | \$70,109         |
| leased                        | 65               | 0                | Financial lease                         |                  |                  |
|                               |                  |                  | (structures)                            | 65               | 0                |
| <b>Total</b>                  | <b>\$210,996</b> | <b>\$218,792</b> | <b>Total</b>                            | <b>\$68,851</b>  | <b>\$70,109</b>  |
| <b>Total Farm Assets</b>      | <b>\$541,205</b> | <b>\$560,328</b> | <b>Total Farm Liab.</b>                 | <b>\$180,222</b> | <b>\$184,605</b> |
|                               |                  |                  | <b>FARM NET WORTH</b>                   | <b>\$360,983</b> | <b>\$375,723</b> |

| <u>Nonfarm Assets, Liabilities &amp; Net Worth (Average of 24 farms reporting)</u> |                 |                 |                                    |                 |                 |
|--|-----------------|-----------------|------------------------------------|-----------------|-----------------|
| <u>Assets</u>  |                 |                 | <u>Liabilities &amp; Net Worth</u> |                 |                 |
|  | <u>Jan. 1</u>   | <u>Dec. 31</u>  |                                    | <u>Jan. 1</u>   | <u>Dec. 31</u>  |
| Personal cash, chkg. & savings   | \$5,986         | \$2,482         | Nonfarm Liab.                      | \$1,988         | \$2,468         |
| Cash value life ins.   | 7,400           | 8,327           |                                    |                 |                 |
| Nonfarm real estate  | 7,917           | 8,125           |                                    |                 |                 |
| Auto (personal sh.)  | 2,867           | 3,237           |                                    |                 |                 |
| Stocks & bonds   | 4,713           | 8,285           |                                    |                 |                 |
| Household furn.  | 9,470           | 9,804           |                                    |                 |                 |
| All other  | 3,820           | 3,375           |                                    |                 |                 |
| <b>Total Nonfarm</b>   | <b>\$42,172</b> | <b>\$43,634</b> | <b>NONFARM NET WORTH</b>           | <b>\$40,184</b> | <b>\$41,166</b> |

| <u>Farm &amp; Nonfarm Assets, Liabilities, &amp; Net Worth*</u> |                  |                  |
|---|------------------|------------------|
|   | <u>Jan. 1</u>    | <u>Dec. 31</u>   |
| <b>Total Assets</b>   | <b>\$583,377</b> | <b>\$603,962</b> |
| <b>Total Liabilities</b>  | <b>182,210</b>   | <b>187,073</b>   |
| <b>TOTAL FARM &amp; NONFARM NET WORTH</b>                       | <b>\$401,167</b> | <b>\$416,889</b> |

\*Assumes that average nonfarm assets and liabilities for the nonreporting farms were the same as for those reporting.

The following condensed balance sheet, including deferred taxes, contains average data from only those farmers who elected to provide the additional information required to compute deferred taxes.

Deferred taxes represent an estimate of the taxes that would be paid if the farm were sold at year end fair market values and date on the balance sheet. Accuracy is dependent on the accuracy of the market values and the tax basis data provided. Any tax liability for assets other than livestock, machinery, land, buildings and nonfarm assets is excluded. It is assumed that all gain on purchased livestock and machinery is ordinary gain and that listed market values are net of selling costs. The effects of investment tax credit carryover and recapture, carryover of operating losses, alternative minimum taxes and other than average exemptions and deductions are excluded because they have only minor influence on the taxes of most farms. However, they could be important.

**CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES**

December 31, 1993

11 New York Dairy Farms, 1993

| <u>ASSETS</u>               |                   | <u>LIABILITIES &amp; NET WORTH</u> |                  |
|-----------------------------|-------------------|------------------------------------|------------------|
|                             |                   | Current debts & payables           | \$ 29,319        |
|                             |                   | Current deferred taxes             | 13,689           |
| Total Current Assets        | \$ 48,897         | Total Current Liabilities          | \$ 43,008        |
|                             |                   | Intermediate debts & leases        | \$ 71,566        |
|                             |                   | Intermediate deferred taxes        | 51,440           |
| Total Inter. Assets         | \$ 191,334        | Total Inter. Liabilities           | \$ 123,006       |
|                             |                   | Long term debts & leases           | \$ 55,484        |
|                             |                   | Long term deferred taxes           | 18,836           |
| Total Long Term Assets      | \$ 178,091        | Total Long Term Liab.              | \$74,321         |
| <b>TOTAL FARM ASSETS</b>    | <b>\$ 418,322</b> | <b>TOTAL FARM LIABILITIES</b>      | <b>\$240,335</b> |
|                             |                   | Farm Net Worth                     | \$177,987        |
|                             |                   | <u>Percent Equity (Farm)</u>       | <u>43%</u>       |
|                             |                   | Nonfarm debts                      | \$4,767          |
|                             |                   | Nonfarm deferred taxes             | 6,087            |
| <u>Total Nonfarm Assets</u> | <u>\$ 37,756</u>  | <u>Total Nonfarm Liabilities</u>   | <u>\$10,854</u>  |
| <b>TOTAL ASSETS</b>         | <b>\$456,078</b>  | <b>TOTAL LIABILITIES</b>           | <b>\$251,189</b> |
|                             |                   | Total Net Worth                    | \$204,889        |
|                             |                   | <u>Percent Equity (Total)</u>      | <u>45%</u>       |

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. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability.

### BALANCE SHEET ANALYSIS

37 Western Plateau Region Farms, 1993

| Item  | Average | My Farm                 |         |                         |
|---|---------|-------------------------|---------|-------------------------|
| <u>Financial Ratios - Farm:</u>             |         |                         |         |                         |
| Percent equity                              | 67%     | _____ %                 |         |                         |
| Debt/asset ratio: total                     | .33     | _____                   |         |                         |
| long-term                                   | .32     | _____                   |         |                         |
| intermediate/current                        | .34     | _____                   |         |                         |
| <u>Farm Debt Analysis:</u>                  |         |                         |         |                         |
| Accounts payable as % of total debt         | 5%      | _____ %                 |         |                         |
| Long-term liabilities as a % of total debt  | 38%     | _____ %                 |         |                         |
| Current & inter. liab. as a % of total debt | 62%     | _____ %                 |         |                         |
| <u>Farm Debt Levels:</u>                    |         |                         |         |                         |
|   | Per Cow | Per Tillable Acre Owned | Per Cow | Per Tillable Acre Owned |
| Total farm debt                             | \$1,964 | \$1,067                 | \$_____ | \$_____                 |
| Long-term debt                              | 746     | 405                     | _____   | _____                   |
| Intermediate & current debt                 | 1,218   | 662                     | _____   | _____                   |

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

37 Western Plateau Region Dairy Farms, 1993

| Item               | Average of Region's Farms |                       |
|--------------------|---------------------------|-----------------------|
|                    | Real Estate               | Machinery & Equipment |
| Value beg. of year | \$210,931                 | \$117,695             |
| Purchases          | \$11,422                  | \$13,636              |
| Gift/inheritance   | + 1,081                   | + 259                 |
| Lost capital       | - 1,988                   | - --                  |
| Sales              | - 2,150                   | - 566                 |
| Depreciation       | - 6,443                   | - 13,257              |
| Net investment     | = 1,922                   | = 72                  |
| Appreciation       | + 5,940                   | + 1,246               |
| Value end of year  | \$218,792                 | \$119,013             |

\*\$3,073 land and \$8,349 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 interrelated and 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) and (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity).

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

**STATEMENT OF OWNER EQUITY (RECONCILIATION)**  
37 Western Plateau Region Dairy Farms, 1993

| Item   | Average         | My Farm   |
|--|-----------------|-----------|
| Beginning of year farm net worth   | \$360,983       | \$ _____  |
| Net farm income w/o apprec.  | \$ 27,485       | \$ _____  |
| +Nonfarm cash income   | + 5,099         | + _____   |
| -Personal withdrawals & family expenditures excluding nonfarm borrowings | <u>- 28,584</u> | - _____   |
| RETAINED EARNINGS  | +\$ 4,000       | \$ _____  |
| Nonfarm noncash transfers to farm  | \$ 1,357        | \$ _____  |
| +Cash used in business from nonfarm capital                              | + 1,767         | + _____   |
| -Note/mortgage from farm real estate sold (nonfarm)                      | <u>- 0</u>      | - _____   |
| CONTRIBUTED/WITHDRAWN CAPITAL  | +\$ 3,123       | +\$ _____ |
| Appreciation   | \$ 9,148        | \$ _____  |
| -Lost capital  | <u>- 1,988</u>  | - _____   |
| CHANGE IN VALUATION EQUITY   | +\$ 7,160       | +\$ _____ |
| IMBALANCE/ERROR  | <u>- -456</u>   | -\$ _____ |
| End of year farm net worth*  | =\$375,723      | =\$ _____ |
| Change in net worth w/apprec.  | \$ 14,740       | \$ _____  |
| <hr/>  |                 |           |
| <u>Change in Net Worth</u>   |                 |           |
| Without appreciation   | \$ 5,592        | \$ _____  |
| With appreciation  | \$14,740        | \$ _____  |

\*May not add due to rounding.

**Cash Flow Statement**

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

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

**ANNUAL CASH FLOW STATEMENT**

37 Western Plateau Region Dairy Farms, 1993

| <u>Item</u>   | <u>Average</u> |                  |
|---|----------------|------------------|
| <b><u>Cash Flow from Operating Activities</u></b>                         |                |                  |
| Cash farm receipts  | \$238,430      |                  |
| - Cash farm expenses  | <u>196,902</u> |                  |
| = Net cash farm income  |                | \$ 41,528        |
| Nonfarm income  | \$ 5,099       |                  |
| - Personal withdrawals/family expenses<br>including nonfarm debt payments | <u>29,355</u>  |                  |
| + Net cash nonfarm income   |                | <u>\$-24,256</u> |
| = Net Provided by Operating Activities                                    |                | \$ 17,272        |
| <b><u>Cash Flow From Investing Activities</u></b>                         |                |                  |
| Sale of Assets: Machinery   | \$ 566         |                  |
| + real estate   | 2,150          |                  |
| + other stock/cert.   | <u>45</u>      |                  |
| = Total asset sales   |                | \$ 2,761         |
| Capital purchases: expansion livestock                                    | \$ 2,507       |                  |
| + machinery   | 13,636         |                  |
| + real estate   | 11,422         |                  |
| + other stock/cert.   | <u>0</u>       |                  |
| - Total invested in farm assets   |                | <u>\$ 27,565</u> |
| = Net Provided by Investment Activities                                   |                | \$-24,804        |
| <b><u>Cash Flow From Financing Activities</u></b>                         |                |                  |
| Money borrowed (inter. & long term)                                       | \$ 28,704      |                  |
| + Money borrowed (short-term)   | 943            |                  |
| + Increase in operating debt  | 144            |                  |
| + Cash from nonfarm cap. used in business                                 | 1,767          |                  |
| + Money borrowed - nonfarm  | <u>771</u>     |                  |
| = Cash inflow from financing  |                | \$ 32,329        |
| Principal payments (inter. & long-term)                                   | \$ 25,157      |                  |
| + Principal payments (short-term)   | 785            |                  |
| + Decrease in operating debt  | <u>0</u>       |                  |
| - Cash outflow for financing  |                | <u>\$ 25,942</u> |
| = Net Provided by Financing Activities                                    |                | \$ 6,387         |
| <b><u>Cash Flow From Reserves</u></b>                                     |                |                  |
| Beginning farm cash, checking & savings                                   | \$ 4,327       |                  |
| - Ending farm cash, checking & savings                                    | <u>3,638</u>   |                  |
| = Net Provided from Reserves  |                | \$ 689           |
| <b><u>Imbalance (error)</u></b>   |                | <b>\$ -456</b>   |

## ANNUAL CASH FLOW STATEMENT

| Item  | My Farm  |          |
|---|----------|----------|
| <u>Cash Flow from Operating Activities</u>                                |          |          |
| Cash farm receipts  | \$ _____ |          |
| - Cash farm expenses  | _____    |          |
| = Net cash farm income  |          | \$ _____ |
| Nonfarm income  | \$ _____ |          |
| - Personal withdrawals/family expenses<br>including nonfarm debt payments | _____    |          |
| + Net cash nonfarm income   |          | \$ _____ |
| = Net Provided by Operating Activities                                    |          | \$ _____ |
| <u>Cash Flow From Investing Activities</u>                                |          |          |
| Sale of Assets: Machinery   | \$ _____ |          |
| + real estate   | _____    |          |
| + other stock/cert.   | _____    |          |
| = Total asset sales   |          | \$ _____ |
| Capital purchases: expansion livestock                                    | \$ _____ |          |
| + machinery   | _____    |          |
| + real estate   | _____    |          |
| + other stock/cert.   | _____    |          |
| - Total invested in farm assets   |          | \$ _____ |
| = Net Provided by Investment Activities                                   |          | \$ _____ |
| <u>Cash Flow From Financing Activities</u>                                |          |          |
| Money borrowed (inter. & long term)                                       | \$ _____ |          |
| + Money borrowed (short-term)   | _____    |          |
| + Increase in operating debt  | _____    |          |
| + Cash from nonfarm cap. used in business                                 | _____    |          |
| + Money borrowed - nonfarm  | _____    |          |
| = Cash inflow from financing  |          | \$ _____ |
| Principal payments (inter. & long-term)                                   | \$ _____ |          |
| + Principal payments (short-term)   | _____    |          |
| + Decrease in operating debt  | _____    |          |
| - Cash outflow for financing  |          | \$ _____ |
| = Net Provided by Financing Activities                                    |          | \$ _____ |
| <u>Cash Flow From Reserves</u>  |          |          |
| Beginning farm cash, checking & savings                                   | \$ _____ |          |
| - Ending farm cash, checking & savings                                    | _____    |          |
| = Net Provided from Reserves  |          | \$ _____ |
| <u>Imbalance (error)</u>  |          | \$ _____ |



**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 1994. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1994 debt payments shown below.

**FARM DEBT PAYMENTS PLANNED**

Same 19 Western Plateau Region Dairy Farms, 1992 &amp; 1993

| Debt Payments                       | Average       |          |                 | My Farm       |          |                 |
|-------------------------------------|---------------|----------|-----------------|---------------|----------|-----------------|
|                                     | 1993 Payments |          | Planned<br>1994 | 1993 Payments |          | Planned<br>1994 |
|                                     | Planned       | Made     |                 | Planned       | Made     |                 |
| Long-term                           | \$ 6,602      | \$ 8,649 | \$10,266        | \$ _____      | \$ _____ | \$ _____        |
| Intermediate-term                   | 25,785        | 29,557   | 24,761          | _____         | _____    | _____           |
| Short-term                          | 2,023         | 1,553    | 1,225           | _____         | _____    | _____           |
| Operating (net<br>reduction)        | 1,768         | 150      | 693             | _____         | _____    | _____           |
| Accounts payable<br>(net reduction) | 1,783         | 0        | 1,799           | _____         | _____    | _____           |
| Total                               | \$37,962      | \$39,909 | \$38,744        | \$ _____      | \$ _____ | \$ _____        |
| Per cow                             | \$ 404        | \$ 425   |                 | \$ _____      | \$ _____ |                 |
| Per cwt. 1993 milk                  | \$ 2.19       | \$ 2.30  |                 | \$ _____      | \$ _____ |                 |
| Percent of total<br>1993 receipts   | 14%           | 15%      |                 | _____         | _____    |                 |
| Percent of 1993<br>milk receipts    | 17%           | 18%      |                 | _____         | _____    |                 |

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of payments planned for 1993 (as of December 31, 1992) that could have been made with the amount available for debt service in 1993. Farmers who did not participate in DFBS in 1992 have their 1993 cash flow coverage ratio based on planned debt payments for 1994.

**CASH FLOW COVERAGE RATIO**

Same 19 Western Plateau Region Dairy Farms, 1992 &amp; 1993

| Item  | Average   | My Farm  |
|---|-----------|----------|
| Cash farm receipts  | \$254,445 | \$ _____ |
| - Cash farm expenses  | 200,474   | _____    |
| + Interest paid   | 11,010    | _____    |
| - Net personal withdrawals from farm*                             | 31,676    | _____    |
| (A) = Amount Available for Debt Service                           | \$ 33,305 | \$ _____ |
| (B) = Debt Payments Planned for 1993<br>(as of December 31, 1992) | \$ 37,962 | \$ _____ |
| (A/B) = Cash Flow Coverage Ratio for 1993                         | .88       | _____    |

\*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

| Item  | Regional Average |          | My Farm              | Expected<br>Change | 1994<br>Projection |
|---|------------------|----------|----------------------|--------------------|--------------------|
|   | Per Cow          | Per Cwt. | Per Cow/<br>Per Cwt. |                    |                    |
| No. cows and cwt. milk                                      | 92.1             | 15,966   |                      |                    |                    |
| <u>Accrual Oper. Receipts</u>                               |                  |          |                      |                    |                    |
| Milk  | \$2,261.90       | \$13.05  | \$                   |                    | \$                 |
| Dairy cattle  | 229.40           | 1.32     |                      |                    |                    |
| Dairy calves  | 46.71            | .27      |                      |                    |                    |
| Other livestock   | -.25             | .00      |                      |                    |                    |
| Crops   | 51.69            | .30      |                      |                    |                    |
| Misc. receipts  | 113.56           | .65      |                      |                    |                    |
| Total   | \$2,703.02       | \$15.59  | \$                   |                    | \$                 |
| <u>Accrual Oper. Expenses</u>                               |                  |          |                      |                    |                    |
| Hired labor   | \$262.53         | \$1.51   | \$                   |                    | \$                 |
| Dairy grain & conc.   | 705.99           | 4.07     |                      |                    |                    |
| Dairy roughage  | 28.68            | .17      |                      |                    |                    |
| Nondairy feed   | 0.00             | .00      |                      |                    |                    |
| Mach. hire/rent/lease                                       | 28.09            | .16      |                      |                    |                    |
| Mach. rpr./parts & auto                                     | 168.90           | .97      |                      |                    |                    |
| Fuel, oil & grease  | 63.64            | .37      |                      |                    |                    |
| Replacement lvstk.  | 28.52            | .16      |                      |                    |                    |
| Breeding  | 37.88            | .22      |                      |                    |                    |
| Vet & medicine  | 57.11            | .33      |                      |                    |                    |
| Milk marketing  | 130.25           | .75      |                      |                    |                    |
| Cattle lease  | 1.43             | .01      |                      |                    |                    |
| Other livestock exp.  | 112.06           | .65      |                      |                    |                    |
| Fertilizer & lime   | 60.97            | .35      |                      |                    |                    |
| Seeds & plants  | 35.84            | .21      |                      |                    |                    |
| Spray/other crop exp.                                       | 26.75            | .15      |                      |                    |                    |
| Land, bldg., fence repair                                   | 36.68            | .21      |                      |                    |                    |
| Taxes   | 65.37            | .38      |                      |                    |                    |
| Real estate rent/lease                                      | 48.11            | .28      |                      |                    |                    |
| Insurance   | 44.43            | .26      |                      |                    |                    |
| Utilities   | 66.55            | .38      |                      |                    |                    |
| Miscellaneous   | 34.45            | .20      |                      |                    |                    |
| Total Less Int. Paid  | \$2,044.23       | \$11.79  | \$                   |                    | \$                 |
| <u>Net Accrual Operating Income (Total)</u>                 |                  |          |                      |                    |                    |
| (without interest paid)                                     | \$60,673         |          | \$                   |                    | \$                 |
| - Change in lvstk./crop inv.*                               | 8,716            |          |                      |                    |                    |
| - Change in accts. rec.                                     | 1,784            |          |                      |                    |                    |
| + Change in feed/supply inv.**                              | 1,556            |          |                      |                    |                    |
| + Change in accts. payable***                               | 780              |          |                      |                    |                    |
| NET CASH FLOW   | \$52,509         |          | \$                   |                    | \$                 |
| - Net personal w/drawals from farm (see footnote on pg. 14) | \$23,485         |          |                      |                    |                    |
| Available for Farm Debt                                     |                  |          |                      |                    |                    |
| Payments & Investments                                      | \$29,024         |          | \$                   |                    | \$                 |
| - Farm debt payments  | 36,055           |          |                      |                    |                    |
| Available for Farm Investment                               | \$-7,031         |          | \$                   |                    | \$                 |
| - Capital purchases: cattle, machinery & improvements       | \$27,565         |          |                      |                    |                    |
| Additional Capital Needed                                   |                  |          | \$                   |                    | \$                 |

\*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, how well crops are producing, and what it costs to produce them is important to evaluating alternative cropping and feed purchasing alternatives.

**LAND RESOURCES AND CROP PRODUCTION**  
37 Western Plateau Region Dairy Farms, 1993

| <u>Item</u>          | <u>Average</u> |               |                  | <u>My Farm</u> |                  |              |
|----------------------|----------------|---------------|------------------|----------------|------------------|--------------|
|                      | <u>Owned</u>   | <u>Rented</u> | <u>Total</u>     | <u>Owned</u>   | <u>Rented</u>    | <u>Total</u> |
| <b>Land</b>          |                |               |                  |                |                  |              |
| Tillable             | 173            | 104           | 277              | _____          | _____            | _____        |
| Nontillable          | 62             | 12            | 74               | _____          | _____            | _____        |
| Other nontillable    | <u>113</u>     | <u>9</u>      | <u>122</u>       | _____          | _____            | _____        |
| Total                | 348            | 125           | 473              | _____          | _____            | _____        |
| <b>Crop Yields</b>   | <b>Farms</b>   | <b>Acres*</b> | <b>Prod/Acre</b> | <b>Acres</b>   | <b>Prod/Acre</b> |              |
| Hay crop             | 37             | 171           | 2.52 tn DM       | _____          | _____            | tn DM        |
| Corn silage          | 34             | 70            | 13.34 tn         | _____          | _____            | tn           |
|                      |                |               | 4.60 tn DM       | _____          | _____            | tn DM        |
| Other forage         | 8              | 22            | .98 tn DM        | _____          | _____            | tn DM        |
| Total forage         | 37             | 240           | 3.04 tn DM       | _____          | _____            | tn DM        |
| Corn grain           | 10             | 60            | 96.28 bu         | _____          | _____            | bu           |
| Oats                 | 3              | 46            | 67.63 bu         | _____          | _____            | bu           |
| Wheat                | 1              | 6             | 50.00 bu         | _____          | _____            | bu           |
| Other crops          | 2              | 32            |                  | _____          |                  |              |
| Tillable pasture     | 11             | 32            |                  | _____          |                  |              |
| Idle                 | 12             | 17            |                  | _____          |                  |              |
| Total Tillable Acres | 37             | 277           |                  | _____          |                  |              |

\*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 171, corn silage 64, corn grain 16, oats 4, tillable pasture 10, and idle 5.

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

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

**CROP/DAIRY RATIOS**  
37 Western Plateau Region Farms, 1993

| <u>Item</u>                               | <u>Average</u> | <u>My Farm</u> |
|---|----------------|----------------|
| Total tillable acres per cow              | 3.01           | _____          |
| Total forage acres per cow                | 2.61           | _____          |
| Harvested forage dry matter, tons per cow | 7.93           | _____          |

**Cropping Analysis** (continued)

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

**CROP RELATED ACCRUAL EXPENSES**

37 Western Plateau Region Farms Reporting, 1993

| Item                   | Total<br>Per<br>Till.<br>Acre | All<br>Corn<br>Per<br>Acre | Corn<br>Silage<br>Per<br>Ton DM | Corn<br>Grain<br>Per Dry<br>Sh.Bu. | Hay Crop    |               | Pasture              |                      |
|------------------------|-------------------------------|----------------------------|---------------------------------|------------------------------------|-------------|---------------|----------------------|----------------------|
|                        |                               |                            |                                 |                                    | Per<br>Acre | Per<br>Ton DM | Per<br>Till.<br>Acre | Per<br>Total<br>Acre |
| No. of farms reporting | 37                            | 10                         |                                 |                                    | 11          |               | 0                    |                      |
| Ave. number of acres   | 277                           | 83                         |                                 |                                    | 204         |               | 0                    | 0                    |
| Fert./lime             | \$20.27                       | \$35.29                    | \$8.72                          | \$.36                              | \$15.62     | \$5.98        | \$.00                | \$.00                |
| Seeds/plants           | 11.92                         | 24.69                      | 6.10                            | .25                                | 6.43        | 2.46          | .00                  | .00                  |
| Spray/other crop exp.  | <u>8.90</u>                   | <u>23.01</u>               | <u>5.69</u>                     | <u>.23</u>                         | <u>.36</u>  | <u>.14</u>    | <u>.00</u>           | <u>.00</u>           |
| TOTAL                  | \$41.09                       | \$82.99                    | \$20.51                         | \$.84                              | \$22.41     | \$8.58        | \$.00                | \$.00                |

**My Farm:**

|                       |          |          |          |          |          |          |          |          |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Fert./lime            | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ |
| Seeds/plants          | _____    | _____    | _____    | _____    | _____    | _____    | _____    | _____    |
| Spray/other crop exp. | _____    | _____    | _____    | _____    | _____    | _____    | _____    | _____    |
| TOTAL                 | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ |

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**

37 Western Plateau Region Farms, 1993

| Machinery<br>Expense Item  | Average           |                   | My Farm           |                   |
|----------------------------|-------------------|-------------------|-------------------|-------------------|
|                            | Total<br>Expenses | Per Till.<br>Acre | Total<br>Expenses | Per Till.<br>Acre |
| Fuel, oil & grease         | \$5,861           | \$21.16           | \$ _____          | \$ _____          |
| Machinery repairs & parts  | 14,055            | 50.74             | _____             | _____             |
| Machine hire, rent & lease | 2,587             | 9.34              | _____             | _____             |
| Auto expense (farm share)  | 1,501             | 5.42              | _____             | _____             |
| Interest (5%)              | 5,918             | 21.36             | _____             | _____             |
| Depreciation               | <u>13,257</u>     | <u>47.86</u>      | _____             | _____             |
| Total                      | \$43,179          | \$155.88          | \$ _____          | \$ _____          |

**Dairy Analysis**

Analysis of the dairy enterprise can reveal a great deal about the 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 6 and 7.

**DAIRY HERD INVENTORY**  
37 Western Plateau Region Dairy Farms, 1993

| Item                 | Dairy Cows |            | Heifers             |            |      |            |     |            |
|----------------------|------------|------------|---------------------|------------|------|------------|-----|------------|
|                      | No.        | Value      | Bred                |            | Open | Calves     |     |            |
|                      | No.        | Value      | No.                 | Value      | No.  | Value      | No. | Value      |
| Beg. year (owned)    | 91         | \$96,137   | 32                  | \$26,062   | 26   | \$14,343   | 26  | \$7,892    |
| + Change w/o apprec. |            | 4,109      |                     | 1,272      |      | -287       |     | -107       |
| + Appreciation       |            | <u>121</u> |                     | <u>580</u> |      | <u>-39</u> |     | <u>184</u> |
| End year (owned)     | 94         | \$100,367  | 34                  | \$27,914   | 25   | \$14,017   | 26  | \$7,969    |
| End incl. leased     | 94         |            |                     |            |      |            |     |            |
| Average number       | 92         |            | 85 (all age groups) |            |      |            |     |            |

**My Farm:**

|                      |       |          |                        |          |       |          |       |          |
|----------------------|-------|----------|------------------------|----------|-------|----------|-------|----------|
| Beg. of year (owned) | _____ | \$ _____ | _____                  | \$ _____ | _____ | \$ _____ | _____ | \$ _____ |
| + Change w/o apprec. |       | _____    |                        | _____    |       | _____    |       | _____    |
| + Appreciation       |       | _____    |                        | _____    |       | _____    |       | _____    |
| End of year (owned)  | _____ | \$ _____ | _____                  | \$ _____ | _____ | \$ _____ | _____ | \$ _____ |
| End including leased | _____ |          |                        |          |       |          |       |          |
| Average number       | _____ |          | _____ (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**  
37 Western Plateau Region Dairy Farms, 1993

| Item                                       | Average   | My Farm |
|--|-----------|---------|
| Total milk sold, lbs.                      | 1,596,599 | _____   |
| Milk sold per cow, lbs.                    | 17,334    | _____   |
| Average milk plant test, percent butterfat | 3.67      | _____   |

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 AND COST OF PRODUCING MILK**  
37 Western Plateau Region Dairy Farms, 1993

| Item                                   | Average   |         |          | My Farm |         |          |
|--|-----------|---------|----------|---------|---------|----------|
|  | Total     | Per Cow | Per Cwt. | Total   | Per Cow | Per Cwt. |
| <u>Accrual Costs of Producing Milk</u> |           |         |          |         |         |          |
| Operating costs                        | \$161,136 | \$1,750 | \$10.09  | \$_____ | \$_____ | \$_____  |
| Purchased inputs costs                 | \$180,836 | \$1,966 | \$11.33  | \$_____ | \$_____ | \$_____  |
| Total Costs                            | \$235,982 | \$2,562 | \$14.78  | \$_____ | \$_____ | \$_____  |
| <u>Accrual Receipts From Milk</u>      |           |         |          |         |         |          |
|  | \$208,321 | \$2,262 | \$13.05  | \$_____ | \$_____ | \$_____  |

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

**DAIRY RELATED ACCRUAL EXPENSES**  
37 Western Plateau Region Farms, 1993

| Item   | Average |          | My Farm |          |
|--|---------|----------|---------|----------|
|  | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Purchased dairy grain & concentrates             | \$706   | \$4.07   | \$_____ | \$_____  |
| Purchased dairy roughage                         | 29      | .17      | _____   | _____    |
| Total Purchased Dairy Feed                       | \$735   | \$4.24   | \$_____ | \$_____  |
| Purchased grain & conc. as % of milk receipts    |         | 31%      |         | _____%   |
| Purchased feed & crop exp.                       | \$858   | \$4.95   | \$_____ | \$_____  |
| Purchased feed & crop exp. as % of milk receipts |         | 38%      |         | _____%   |
| Breeding   | \$38    | \$.22    | \$_____ | \$_____  |
| Veterinary & medicine                            | 57      | .33      | _____   | _____    |
| Milk marketing                                   | 130     | .75      | _____   | _____    |
| Cattle lease                                     | 1       | .01      | _____   | _____    |
| Other livestock expense                          | 112     | .65      | _____   | _____    |

**Capital and Labor Efficiency Analysis**

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

**CAPITAL EFFICIENCY**

37 Western Plateau Region Farms, 1993

| Item                  | Per Worker | Per Cow  | Per Tillable Acre | Per Tillable Acre Owned |
|-----------------------|------------|----------|-------------------|-------------------------|
| Farm capital          | \$184,718  | \$5,980  | \$1,988           | \$3,184                 |
| Real estate           |            | 2,333    |                   | 1,242                   |
| Machinery & equipment | 40,904     | 1,324    | 440               |                         |
| Asset turnover ratio  |            | .47      |                   |                         |
| <b>My Farm:</b>       |            |          |                   |                         |
| Farm capital          | \$ _____   | \$ _____ | \$ _____          | \$ _____                |
| Real estate           | _____      | _____    | _____             | _____                   |
| Machinery & equipment | _____      | _____    | _____             | _____                   |
| Asset turnover ratio  | _____      | _____    | _____             | _____                   |

**LABOR FORCE INVENTORY AND ANALYSIS**

37 Western Plateau Region Farms, 1993

| Labor Force           | Months      | Age   | Years of Educ. | Value of Labor & Mgmt. |
|-----------------------|-------------|---|----------------|------------------------|
| Operator number 1     | 11.89       | 46  | 13             | \$20,838               |
| Operator number 2     | 5.68        | 44  | 13             | 9,243                  |
| Operator number 3     | 1.84        | 53  | 13             | 3,203                  |
| Family paid           | 4.00        |   |                |                        |
| Family unpaid         | 2.46        |   |                |                        |
| Hired                 | <u>9.92</u> |   |                |                        |
| Total                 | 35.78       | / 12 = 2.98 Worker Equivalent<br>1.62 Operator/Manager Equiv. |                |                        |
| <b>My Farm: Total</b> | _____       | / 12 = _____ Worker Equivalent                                |                |                        |
| Operator's            | _____       | / 12 = _____ Operator/Manager Equiv.                          |                |                        |

| Labor Efficiency     | Average   |            | My Farm |            |
|----------------------|-----------|------------|---------|------------|
|                      | Total     | Per Worker | Total   | Per Worker |
| Cows, average number | 92        | 31         | _____   | _____      |
| Milk sold, pounds    | 1,596,599 | 535,472    | _____   | _____      |
| Tillable acres       | 277       | 93         | _____   | _____      |
| Work units           | 989       | 332        | _____   | _____      |

| Labor Costs                              | Total         | Average    |             | My Farm  |          |          |
|--|---------------|------------|-------------|----------|----------|----------|
|  |               | Per Cow    | Per Cwt.    | Total    | Per Cow  | Per Cwt. |
| Value of operator(s) labor (\$1,400/mo.) | \$27,160      | \$295      | \$1.70      | \$ _____ | \$ _____ | \$ _____ |
| Family unpaid (\$1,400/mo.)              | 3,444         | 37         | .22         | _____    | _____    | _____    |
| Hired                                    | <u>24,179</u> | <u>263</u> | <u>1.51</u> | _____    | _____    | _____    |
| Total Labor                              | \$54,783      | \$595      | \$3.43      | \$ _____ | \$ _____ | \$ _____ |
| Machinery Cost                           | \$43,179      | \$469      | \$2.70      | \$ _____ | \$ _____ | \$ _____ |
| Total Labor & Mach.                      | \$97,962      | \$1,064    | \$6.13      | \$ _____ | \$ _____ | \$ _____ |

## COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Progress of the Farm Business

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

## PROGRESS OF THE FARM BUSINESS

Same 19 Western Plateau Region Dairy Farms, 1992 & 1993

| Selected Factors                              | Average of 19 Farms* |           | My Farm  |          |          |
|---|----------------------|-----------|----------|----------|----------|
|   | 1992                 | 1993      | 1992     | 1993     | Goal     |
| <u>Size of Business</u>                       |                      |           |          |          |          |
| Average number of cows                        | 95                   | 94        | _____    | _____    | _____    |
| Average number of heifers                     | 83                   | 88        | _____    | _____    | _____    |
| Milk sold, lbs.                               | 1,700,514            | 1,734,425 | _____    | _____    | _____    |
| Worker equivalent                             | 3.22                 | 3.07      | _____    | _____    | _____    |
| Total tillable acres                          | 246                  | 247       | _____    | _____    | _____    |
| <u>Rates of Production</u>                    |                      |           |          |          |          |
| Milk sold per cow, lbs.                       | 17,950               | 18,400    | _____    | _____    | _____    |
| Hay DM per acre, tons                         | 2.70                 | 2.67      | _____    | _____    | _____    |
| Corn silage per acre, tons                    | 13                   | 14        | _____    | _____    | _____    |
| <u>Labor Efficiency</u>                       |                      |           |          |          |          |
| Cows per worker                               | 29                   | 31        | _____    | _____    | _____    |
| Milk sold/worker, lbs.                        | 528,241              | 564,224   | _____    | _____    | _____    |
| <u>Cost Control</u>                           |                      |           |          |          |          |
| Grain & conc. purchased<br>as % of milk sales | 30%                  | 30%       | _____ %  | _____ %  | _____ %  |
| Dairy feed & crop exp.<br>per cwt. milk       | \$5.13               | \$4.83    | \$ _____ | \$ _____ | \$ _____ |
| Labor & mach. costs/cow                       | \$1,040              | \$1,041   | \$ _____ | \$ _____ | \$ _____ |
| Operating cost of producing<br>cwt. of milk   | \$10.66              | \$9.82    | \$ _____ | \$ _____ | \$ _____ |
| <u>Capital Efficiency**</u>                   |                      |           |          |          |          |
| Farm capital per cow                          | \$5,631              | \$5,893   | \$ _____ | \$ _____ | \$ _____ |
| Mach. & equip. per cow                        | \$1,141              | \$1,203   | \$ _____ | \$ _____ | \$ _____ |
| Asset turnover ratio                          | .51                  | .49       | _____    | _____    | _____    |
| <u>Profitability</u>                          |                      |           |          |          |          |
| Net farm inc. w/o apprec.                     | \$28,332             | \$35,764  | \$ _____ | \$ _____ | \$ _____ |
| Net farm inc. w/apprec.                       | \$41,894             | \$45,993  | \$ _____ | \$ _____ | \$ _____ |
| Labor & mgt. income<br>per oper./manager      | \$4,660              | \$7,369   | \$ _____ | \$ _____ | \$ _____ |
| Rate of return on eq.<br>capital w/apprec.    | 1%                   | 1%        | _____ %  | _____ %  | _____ %  |
| Rate of return on all<br>capital w/apprec.    | 3%                   | 3%        | _____ %  | _____ %  | _____ %  |
| <u>Financial Summary</u>                      |                      |           |          |          |          |
| Farm net worth, end year                      | \$384,398            | \$398,479 | \$ _____ | \$ _____ | \$ _____ |
| Debt to asset ratio                           | .29                  | .30       | _____    | _____    | _____    |
| Farm debt per cow                             | \$1,675              | \$1,732   | \$ _____ | \$ _____ | \$ _____ |

\*Farms participating both years.\*\*Average for the year.



**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**

37 Western Plateau Region Dairy Farms, 1993

| Size of Business          |                   |                        | Rates of Production            |                             |                                 | Labor Efficiency      |                                   |
|---------------------------|-------------------|------------------------|--------------------------------|-----------------------------|---------------------------------|-----------------------|-----------------------------------|
| Worker<br>Equiv-<br>alent | No.<br>of<br>Cows | Pounds<br>Milk<br>Sold | Pounds<br>Milk Sold<br>Per Cow | Tons<br>Hay Crop<br>DM/Acre | Tons Corn<br>Silage<br>Per Acre | Cows<br>Per<br>Worker | Pounds<br>Milk Sold<br>Per Worker |
| (11)*                     | (11)              | (11)                   | (10)                           | (9)                         | (9)                             | (11)                  | (11)                              |
| 5.0                       | 162               | 2,808,464              | 20,901                         | 3.8                         | 18                              | 40                    | 730,870                           |
| 3.4                       | 109               | 1,935,573              | 18,720                         | 3.2                         | 16                              | 35                    | 606,038                           |
| 2.7                       | 80                | 1,365,036              | 17,027                         | 2.5                         | 14                              | 30                    | 524,280                           |
| 2.0                       | 59                | 1,033,476              | 15,344                         | 1.9                         | 12                              | 27                    | 439,974                           |
| 1.4                       | 39                | 618,898                | 13,989                         | 1.3                         | 7                               | 21                    | 344,986                           |

**Cost Control**

| Grain<br>Bought<br>Per Cow | % Grain is<br>of Milk<br>Receipts | Machinery<br>Costs<br>Per Cow | Labor &<br>Machinery<br>Costs Per Cow | Feed & Crop<br>Expenses<br>Per Cow | Feed & Crop<br>Expenses Per<br>Cwt. Milk |
|----------------------------|-----------------------------------|-------------------------------|---------------------------------------|------------------------------------|--|
| (10)                       | (10)                              | (11)                          | (11)                                  | (10)                               | (10)                                     |
| \$497                      | 22%                               | \$320                         | \$ 830                                | \$ 618                             | \$3.80                                   |
| 644                        | 29                                | 414                           | 963                                   | 759                                | 4.55                                     |
| 721                        | 31                                | 441                           | 1,085                                 | 874                                | 4.96                                     |
| 767                        | 35                                | 520                           | 1,153                                 | 950                                | 5.44                                     |
| 868                        | 39                                | 647                           | 1,306                                 | 1,073                              | 6.05                                     |

| Value and Cost of Production |                                |                                      | Profitability                   |                                 |                                   |                                     |
|------------------------------|--------------------------------|--------------------------------------|---------------------------------|---------------------------------|-----------------------------------|-------------------------------------|
| Milk<br>Receipts<br>Per Cow  | Oper. Cost<br>Milk<br>Per Cwt. | Total Cost<br>Production<br>Per Cwt. | Net Farm<br>Income<br>w/Apprec. | Net Farm<br>Inc. w/o<br>Apprec. | Labor &<br>Mgt. Inc.<br>Per Oper. | Change in<br>Net Worth<br>w/Apprec. |
| (10)                         | (10)                           | (10)                                 | (3)                             | (3)                             | (3)                               | (6)                                 |
| \$2,712                      | \$ 8.08                        | \$12.95                              | \$70,473                        | \$61,448                        | \$18,849                          | \$44,325                            |
| 2,451                        | 9.08                           | 13.98                                | 48,068                          | 33,460                          | 9,330                             | 22,081                              |
| 2,207                        | 9.59                           | 14.73                                | 34,805                          | 22,093                          | 1,588                             | 11,385                              |
| 1,972                        | 10.49                          | 15.53                                | 24,828                          | 16,920                          | -4,651                            | 4,068                               |
| 1,809                        | 11.72                          | 17.15                                | -1,471                          | -2,196                          | -19,887                           | -13,440                             |

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

**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 357 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**

357 New York Dairy Farms, 1992

| <u>Size of Business</u>    |                                   |                               | <u>Rates of Production</u>            |                                    |  | <u>Labor Efficiency</u> |                                   |
|----------------------------|-----------------------------------|-------------------------------|---------------------------------------|------------------------------------|--|-------------------------|-----------------------------------|
| Worker<br>Equiv-<br>alent  | No.<br>of<br>Cows                 | Pounds<br>Milk<br>Sold        | Pounds<br>Milk Sold<br>Per Cow        | Tons<br>Hay Crop<br>DM/Acre        | Tons Corn<br>Silage<br>Per Acre          | Cows<br>Per<br>Worker   | Pounds<br>Milk Sold<br>Per Worker |
| (11)*                      | (11)                              | (11)                          | (10)                                  | (9)                                | (9)                                      | (11)                    | (11)                              |
| 10.0                       | 428                               | 8,455,437                     | 22,613                                | 4.8                                | 22                                       | 52                      | 959,379                           |
| 5.4                        | 184                               | 3,511,396                     | 21,180                                | 3.7                                | 18                                       | 43                      | 797,982                           |
| 4.1                        | 136                               | 2,551,838                     | 20,249                                | 3.2                                | 17                                       | 38                      | 715,818                           |
| 3.4                        | 107                               | 1,971,002                     | 19,582                                | 3.0                                | 16                                       | 34                      | 640,614                           |
| 3.0                        | 89                                | 1,660,762                     | 18,753                                | 2.7                                | 15                                       | 32                      | 587,553                           |
| 2.6                        | 76                                | 1,366,246                     | 18,065                                | 2.5                                | 15                                       | 29                      | 534,745                           |
| 2.4                        | 64                                | 1,149,820                     | 17,445                                | 2.3                                | 13                                       | 27                      | 477,585                           |
| 2.1                        | 57                                | 964,766                       | 16,486                                | 2.1                                | 12                                       | 25                      | 432,399                           |
| 1.8                        | 48                                | 792,337                       | 15,085                                | 1.8                                | 10                                       | 23                      | 389,221                           |
| 1.2                        | 37                                | 578,602                       | 12,400                                | 1.4                                | 6  | 18                      | 296,180                           |
| <u>Cost Control</u>        |                                   |                               |                                       |                                    |  |                         |                                   |
| Grain<br>Bought<br>Per Cow | % Grain is<br>of Milk<br>Receipts | Machinery<br>Costs<br>Per Cow | Labor &<br>Machinery<br>Costs Per Cow | Feed & Crop<br>Expenses<br>Per Cow | Feed & Crop<br>Expenses Per<br>Cwt. Milk |                         |                                   |
| (10)                       | (10)                              | (11)                          | (11)                                  | (10)                               | (10)                                     |                         |                                   |
| \$348                      | 16%                               | \$250                         | \$675                                 | \$497                              | \$3.23                                   |                         |                                   |
| 484                        | 21                                | 325                           | 803                                   | 649                                | 3.77                                     |                         |                                   |
| 556                        | 24                                | 379                           | 867                                   | 716                                | 4.09                                     |                         |                                   |
| 618                        | 26                                | 414                           | 926                                   | 783                                | 4.36                                     |                         |                                   |
| 665                        | 27                                | 442                           | 993                                   | 832                                | 4.55                                     |                         |                                   |
| 712                        | 29                                | 478                           | 1,058                                 | 892                                | 4.76                                     |                         |                                   |
| 763                        | 31                                | 512                           | 1,114                                 | 943                                | 4.99                                     |                         |                                   |
| 826                        | 32                                | 548                           | 1,180                                 | 1,004                              | 5.27                                     |                         |                                   |
| 896                        | 35                                | 608                           | 1,274                                 | 1,071                              | 5.70                                     |                         |                                   |
| 1,030                      | 42                                | 796                           | 1,563                                 | 1,232                              | 6.76                                     |                         |                                   |

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

**FARM BUSINESS CHART FOR FARM  
MANAGEMENT COOPERATORS**

357 New York Dairy Farms, 1992

| Milk Receipts Per Cow (10) | Milk Receipts Per Cwt. (10) | Oper. Cost Milk Per Cow (10) | Oper. Cost Milk Per Cwt. (10) | Total Cost Production Per Cow (10) | Total Cost Production Per Cwt. (10) |
|----------------------------|-----------------------------|------------------------------|-------------------------------|------------------------------------|-------------------------------------|
| \$3,086                    | \$14.64                     | \$1,068                      | \$ 6.84                       | \$1,952                            | \$11.79                             |
| 2,861                      | 14.02                       | 1,419                        | 8.27                          | 2,312                              | 13.00                               |
| 2,732                      | 13.77                       | 1,575                        | 8.96                          | 2,452                              | 13.60                               |
| 2,638                      | 13.60                       | 1,706                        | 9.62                          | 2,567                              | 14.12                               |
| 2,527                      | 13.46                       | 1,845                        | 10.15                         | 2,691                              | 14.75                               |
| -----                      |                             |                              |                               |                                    |                                     |
| 2,434                      | 13.38                       | 1,954                        | 10.67                         | 2,792                              | 15.44                               |
| 2,340                      | 13.27                       | 2,051                        | 11.07                         | 2,934                              | 16.01                               |
| 2,199                      | 13.15                       | 2,163                        | 11.51                         | 3,091                              | 16.59                               |
| 2,023                      | 13.02                       | 2,357                        | 12.18                         | 3,241                              | 17.54                               |
| 1,684                      | 12.56                       | 2,636                        | 14.08                         | 3,666                              | 21.09                               |

**Profitability**

| <u>Net Farm Income</u> |                          | <u>Return to Operator's Labor, Management, &amp; Equity Capital</u> |                          | <u>Labor &amp; Management Income</u> |                  |
|------------------------|--------------------------|---|--------------------------|--------------------------------------|------------------|
| With Appreciation (3)  | Without Appreciation (3) | With Appreciation (3)   | Without Appreciation (3) | Per Farm (3)                         | Per Operator (3) |
| \$275,597              | \$218,659                | \$272,714   | \$216,089                | \$152,525                            | \$111,774        |
| 99,964                 | 79,562                   | 97,288  | 77,148                   | 46,635                               | 33,282           |
| 71,930                 | 55,878                   | 68,243  | 53,019                   | 28,823                               | 20,747           |
| 55,060                 | 42,428                   | 52,537  | 38,519                   | 18,603                               | 12,977           |
| 44,009                 | 32,527                   | 39,218  | 27,999                   | 9,260                                | 6,723            |
| -----                  |                          |   |                          |                                      |                  |
| 33,724                 | 23,687                   | 29,676  | 19,523                   | 1,980                                | 1,639            |
| 26,725                 | 16,924                   | 22,688  | 12,394                   | -4,505                               | -3,779           |
| 18,592                 | 9,627                    | 14,777  | 5,882                    | -13,845                              | -11,067          |
| 8,916                  | 353                      | 5,299   | -4,196                   | -23,769                              | -21,005          |
| -16,432                | -31,254                  | -20,794   | -34,417                  | -61,040                              | -53,650          |

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are shown on pages 28-31.

**Financial Analysis Chart**

The farm financial analysis chart on page 25 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 6, 10, 14 and 20 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

**FINANCIAL ANALYSIS CHART**  
357 New York Dairy Farms, 1992

| Liquidity (repayment)         |                                    |                          |  |              |
|-------------------------------|------------------------------------|--------------------------|--|--------------|
| Planned Debt Payments Per Cow | Available for Debt Service Per Cow | Cash Flow Coverage Ratio | Debt Payments as Percent of Milk Sales | Debt Per Cow |
| (8)*                          | (12)                               | (8)                      | (8)                                    | (5)          |
| \$ 46                         | \$840                              | 4.11                     | 5%                                     | \$ 116       |
| 191                           | 663                                | 1.75                     | 9                                      | 754          |
| 276                           | 579                                | 1.37                     | 13                                     | 1,302        |
| 362                           | 494                                | 1.14                     | 15                                     | 1,781        |
| 411                           | 440                                | 0.98                     | 17                                     | 2,160        |
| 458                           | 401                                | 0.86                     | 19                                     | 2,521        |
| 501                           | 339                                | 0.73                     | 22                                     | 2,882        |
| 584                           | 274                                | 0.60                     | 25                                     | 3,243        |
| 677                           | 181                                | 0.29                     | 30                                     | 3,735        |
| 885                           | -22                                | -0.14                    | 38                                     | 5,214        |

| Solvency         |                |                        | Profitability |  |               |
|------------------|----------------|------------------------|---------------|--|---------------|
| Leverage Ratio** | Percent Equity | Debt/Asset Ratio       |               | Percent Rate of Return with appreciation on: |               |
|                  |                | Current & Intermediate | Long Term     | Equity                                       | Investment*** |
|                  | (5)            | (5)                    | (5)           | (3)  | (3)           |
| 0.02             | 98%            | 0.01                   | 0.00          | 22%  | 16%           |
| 0.11             | 90             | 0.08                   | 0.00          | 11   | 10            |
| 0.24             | 81             | 0.14                   | 0.04          | 8  | 8             |
| 0.35             | 73             | 0.21                   | 0.18          | 5  | 6             |
| 0.48             | 68             | 0.29                   | 0.28          | 3  | 4             |
| 0.58             | 63             | 0.35                   | 0.38          | 1  | 3             |
| 0.74             | 57             | 0.39                   | 0.48          | -1   | 1             |
| 0.95             | 52             | 0.46                   | 0.57          | -4   | -1            |
| 1.29             | 44             | 0.55                   | 0.70          | -8   | -2            |
| 3.20             | 29             | 0.77                   | 1.04          | -26  | -7            |

| Efficiency (Capital)   |                                |                              |                           |                                    |
|------------------------|--------------------------------|------------------------------|---------------------------|------------------------------------|
| Asset Turnover (ratio) | Real Estate Investment Per Cow | Machinery Investment Per Cow | Total Farm Assets Per Cow | Change in Net Worth w/Appreciation |
| (11)                   | (11)                           | (11)                         | (11)                      | (11)                               |
| .71                    | \$1,327                        | \$ 545                       | \$ 4,339                  | \$185,910                          |
| .57                    | 2,044                          | 792                          | 5,156                     | 59,227                             |
| .52                    | 2,372                          | 942                          | 5,727                     | 40,515                             |
| .48                    | 2,667                          | 1,054                        | 6,243                     | 28,384                             |
| .45                    | 2,967                          | 1,194                        | 6,680                     | 19,748                             |
| .42                    | 3,279                          | 1,358                        | 7,120                     | 13,025                             |
| .39                    | 3,663                          | 1,520                        | 7,621                     | 5,269                              |
| .35                    | 4,188                          | 1,753                        | 8,236                     | -2,230                             |
| .31                    | 4,861                          | 2,008                        | 9,100                     | -10,422                            |
| .24                    | 7,201                          | 2,722                        | 12,014                    | -50,747                            |

\*Page number of the participant's DFBS 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 27 includes the average values for the resulting four groups of dairy farms. The average size of farms in the four groups ranges from 47 cows on the small conventional farms to 250 cows on the large freestall farms. The large conventional farms and small freestall farms averaged approximately the same herd size and rates of milk output per cow.

The large freestall farms averaged the highest milk output per cow and per worker, the lowest total costs of production and investment per cow, and the greatest returns to labor, management and capital. The large conventional farms showed average profits somewhat higher than the small freestall operations. Total costs of production averaged substantially less on the large conventional farms.

Farm business charts have been computed for each of the four housing and herd size categories and are on pages 28-31. 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 40-49 of the 1992 State Summary\*. As herd size increases, the average profitability generally increases (pages 42-43). Net farm income without appreciation was \$252,256 per farm for the 300 or more herd size group and \$4,790 per farm for those with less than 40 cows. This relationship generally holds for all measures of profitability including rate of return on capital. However, the 200 to 299 herd size group showed a lower level of profitability in 1992 than the farms with 150-199 cows.

Farm net worth increases rapidly as herd size increases (pages 44-47), even though percent equity was higher on the smaller farms. The 85 to 99 cow group and the group with more than 300 cows demonstrated the strongest ability to make debt payments.

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 48-49)\*. Milk sold per cow increased as herd size increased, ranging from 17,208 pounds on the farms with less than 40 cows to 19,795 pounds on farms with 300 or more cows. Farm capital per worker increased, and farm capital per cow decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 369,797 pounds at the lowest herd size category up to 923,495 pounds at the largest size category.

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\*Smith, Stuart F., Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Management Business Summary, New York, 1992, Department of Agricultural, Resource, and Managerial Economics, Cornell University, A.E. Res. 93-11, August 1993.

**SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE**  
328 New York Dairy Farms, 1992

| Item  | Farms with:  |           | Freestall   |           |
|---|--------------|-----------|-------------|-----------|
|   | Conventional |           |             |           |
|   | <= 60 Cows   | >60 Cows  | <= 120 Cows | >120 Cows |
| Number of farms                                   | 99           | 86        | 59          | 84        |
| <u>Cropping Program Analysis</u>                  |              |           |             |           |
| Total Tillable acres                              | 156          | 276       | 301         | 675       |
| Tillable acres rented*                            | 53           | 90        | 126         | 280       |
| Hay crop acres*                                   | 100          | 165       | 154         | 268       |
| Corn silage acres*                                | 29           | 52        | 75          | 248       |
| Hay crop, tons DM/acre                            | 2.3          | 2.6       | 2.8         | 3.1       |
| Corn silage, tons/acre                            | 13.4         | 15.1      | 13.3        | 14.9      |
| Oats, bushels/acre                                | 57.0         | 68.8      | 60.3        | 67.6      |
| Forage DM per cow, tons                           | 7.6          | 7.9       | 8.7         | 7.2       |
| Tillable acres/cow                                | 3.3          | 3.1       | 3.5         | 2.4       |
| Fert. & lime exp./til. acre                       | \$17.79      | \$ 21.31  | \$ 24.95    | \$ 28.81  |
| Total machinery costs                             | \$22,434     | \$39,496  | \$46,959    | \$114,680 |
| Machinery cost/tillable acre                      | \$144        | \$ 143    | \$ 156      | \$ 170    |
| <u>Dairy Analysis</u>                             |              |           |             |           |
| Number of cows                                    | 48           | 89        | 87          | 279       |
| Number of heifers                                 | 37           | 70        | 73          | 213       |
| Milk sold, lbs.                                   | 828,310      | 1,617,663 | 1,566,899   | 5,421,782 |
| Milk sold/cow, lbs.                               | 17,337       | 18,131    | 18,042      | 19,469    |
| Operating cost of prod. milk/cwt.                 | \$10.09      | \$10.12   | \$10.54     | \$10.61   |
| Total cost of prod. milk/cwt.                     | \$16.41      | \$14.54   | \$15.70     | \$13.59   |
| Price/cwt. milk sold                              | \$13.35      | \$13.41   | \$13.67     | \$13.68   |
| Purchased dairy feed/cow                          | \$713        | \$727     | \$714       | \$750     |
| Purchased dairy feed/cwt. milk                    | \$4.11       | \$4.01    | \$3.95      | \$3.85    |
| Purc. grain & conc. as % milk rec.                | 29%          | 29%       | 28%         | 27%       |
| Purc. feed & crop exp./cwt. milk                  | \$4.81       | \$4.73    | \$4.98      | \$4.62    |
| <u>Capital Efficiency</u>                         |              |           |             |           |
| Farm capital/worker                               | \$193,685    | \$212,649 | \$225,584   | \$245,237 |
| Farm capital/cow                                  | \$7,641      | \$7,032   | \$7,534     | \$6,012   |
| Farm capital/til. acre owned                      | \$3,546      | \$3,373   | \$3,758     | \$4,249   |
| Real estate/cow                                   | \$3,991      | \$3,269   | \$3,458     | \$2,654   |
| Machinery investment/cow                          | \$1,420      | \$1,401   | \$1,589     | \$997     |
| Asset turnover ratio                              | 0.37         | 0.41      | 0.42        | 0.54      |
| <u>Labor Efficiency</u>                           |              |           |             |           |
| Worker equivalent                                 | 1.89         | 2.95      | 2.90        | 6.83      |
| Operator/manager equivalent                       | 1.15         | 1.41      | 1.38        | 1.71      |
| Milk sold/worker, lbs.                            | 439,237      | 548,374   | 540,489     | 794,151   |
| Cows/worker                                       | 25           | 30        | 30          | 41        |
| Labor cost/cow                                    | \$610        | \$526     | \$563       | \$546     |
| Labor cost/tillable acre                          | \$187        | \$170     | \$162       | \$225     |
| <u>Profitability &amp; Balance Sheet Analysis</u> |              |           |             |           |
| Net farm income (w/o apprec.)                     | \$15,377     | \$35,087  | \$26,671    | \$105,301 |
| Labor & mgmt. income/operator                     | \$-1,752     | \$7,912   | \$-70       | \$31,312  |
| Return on all capital w/apprec.                   | 1.1%         | 4.2%      | 4.3%        | 7.9%      |
| Farm debt/cow                                     | \$2,353      | \$2,174   | \$2,482     | \$2,462   |
| Percent equity                                    | 70%          | 69%       | 67%         | 58%       |

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

**FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS**  
99 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1992

| Size of Business          |                   |                        | Rates of Production            |                             |                                    | Labor Efficiency      |                                   |
|---------------------------|-------------------|------------------------|--------------------------------|-----------------------------|------------------------------------|-----------------------|-----------------------------------|
| Worker<br>Equiv-<br>alent | No.<br>of<br>Cows | Pounds<br>Milk<br>Sold | Pounds<br>Milk Sold<br>Per Cow | Tons<br>Hay Crop<br>DM/Acre | Tons<br>Corn<br>Silage<br>Per Acre | Cows<br>Per<br>Worker | Pounds<br>Milk Sold<br>Per Worker |
| (11)*                     | (11)              | (11)                   | (10)                           | (9)                         | (9)                                | (11)                  | (11)                              |
| 2.9                       | 60                | 1,216,307              | 21,382                         | 3.1                         | 22                                 | 46                    | 760,933                           |
| 2.5                       | 59                | 1,056,041              | 19,969                         | 3.1                         | 18                                 | 36                    | 627,590                           |
| 2.3                       | 56                | 971,222                | 19,389                         | 2.9                         | 16                                 | 30                    | 540,690                           |
| 2.1                       | 52                | 904,369                | 18,540                         | 2.6                         | 15                                 | 27                    | 492,638                           |
| 2.0                       | 50                | 833,676                | 18,160                         | 2.4                         | 15                                 | 26                    | 454,994                           |
| -----                     |                   |                        |                                |                             |                                    |                       |                                   |
| 1.8                       | 47                | 784,602                | 17,523                         | 2.2                         | 13                                 | 24                    | 427,601                           |
| 1.6                       | 44                | 741,239                | 16,512                         | 2.1                         | 12                                 | 23                    | 400,809                           |
| 1.4                       | 42                | 663,822                | 15,520                         | 1.9                         | 12                                 | 22                    | 369,048                           |
| 1.2                       | 38                | 614,828                | 14,121                         | 1.6                         | 10                                 | 20                    | 323,957                           |
| 1.0                       | 29                | 460,178                | 11,563                         | 1.2                         | 4                                  | 16                    | 241,563                           |

**Cost Control**

| Grain<br>Bought<br>Per Cow | % Grain is<br>of Milk<br>Receipts | Machinery<br>Costs<br>Per Cow | Labor &<br>Machinery<br>Costs Per Cow | Feed & Crop<br>Expenses<br>Per Cow | Feed & Crop<br>Expenses Per<br>Cwt. Milk |
|----------------------------|-----------------------------------|-------------------------------|---------------------------------------|------------------------------------|--|
| (10)                       | (10)                              | (11)                          | (11)                                  | (10)                               | (10)                                     |
| \$324                      | 17%                               | \$251                         | \$666                                 | \$451                              | \$3.20                                   |
| 454                        | 23                                | 304                           | 810                                   | 582                                | 3.78                                     |
| 531                        | 25                                | 352                           | 917                                   | 671                                | 4.12                                     |
| 602                        | 26                                | 396                           | 977                                   | 724                                | 4.34                                     |
| 650                        | 28                                | 437                           | 1,049                                 | 783                                | 4.52                                     |
| -----                      |                                   |                               |                                       |                                    |  |
| 690                        | 29                                | 470                           | 1,108                                 | 849                                | 4.73                                     |
| 729                        | 31                                | 506                           | 1,159                                 | 913                                | 4.95                                     |
| 796                        | 33                                | 545                           | 1,212                                 | 967                                | 5.33                                     |
| 874                        | 35                                | 599                           | 1,316                                 | 1,054                              | 5.90                                     |
| 1,068                      | 43                                | 867                           | 1,680                                 | 1,302                              | 6.88                                     |

| Value and Cost of Production |                                |                                      | Profitability                   |                                 |                                   |                                     |
|------------------------------|--------------------------------|--------------------------------------|---------------------------------|---------------------------------|-----------------------------------|-------------------------------------|
| Milk<br>Receipts<br>Per Cow  | Oper. Cost<br>Milk<br>Per Cwt. | Total Cost<br>Production<br>Per Cwt. | Net Farm<br>Income<br>w/Apprec. | Net Farm<br>Inc. w/o<br>Apprec. | Labor &<br>Mgt. Inc.<br>Per Oper. | Change in<br>Net Worth<br>w/Apprec. |
| (10)                         | (10)                           | (10)                                 | (3)                             | (3)                             | (3)                               | (6)                                 |
| \$2,911                      | \$6.56                         | \$12.90                              | \$63,046                        | \$44,806                        | \$23,678                          | \$59,924                            |
| 2,698                        | 8.05                           | 14.03                                | 45,628                          | 34,597                          | 14,168                            | 35,056                              |
| 2,574                        | 8.52                           | 14.70                                | 36,269                          | 27,896                          | 9,493                             | 22,019                              |
| 2,497                        | 9.30                           | 15.40                                | 28,971                          | 22,714                          | 4,888                             | 16,391                              |
| 2,422                        | 9.88                           | 16.05                                | 24,643                          | 17,420                          | 1,521                             | 12,621                              |
| -----                        |                                |                                      |                                 |                                 |                                   |                                     |
| 2,322                        | 10.38                          | 16.43                                | 18,479                          | 12,690                          | -2,983                            | 6,278                               |
| 2,178                        | 10.84                          | 16.83                                | 14,042                          | 8,549                           | -7,798                            | 119                                 |
| 2,049                        | 11.31                          | 17.59                                | 8,645                           | 2,239                           | -13,240                           | -4,219                              |
| 1,882                        | 12.23                          | 19.38                                | 3,338                           | -3,095                          | -19,918                           | -9,925                              |
| 1,468                        | 13.66                          | 23.90                                | -9,920                          | -17,335                         | -38,585                           | -20,443                             |

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

**FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS**  
86 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1992

| Size of Business                   |                           |                                | Rates of Production                    |                                    |  | Labor Efficiency              |   |
|------------------------------------|---------------------------|--------------------------------|--|------------------------------------|--|-------------------------------|---|
| Worker<br>Equiv-<br>alent<br>(11)* | No.<br>of<br>Cows<br>(11) | Pounds<br>Milk<br>Sold<br>(11) | Pounds<br>Milk Sold<br>Per Cow<br>(10) | Tons<br>Hay Crop<br>DM/Acre<br>(9) | Tons Corn<br>Silage<br>Per Acre<br>(9) | Cows<br>Per<br>Worker<br>(11) | Pounds<br>Milk Sold<br>Per Worker<br>(11) |
| 4.9                                | 153                       | 2,798,611                      | 22,871                                 | 5.0                                | 23                                     | 48                            | 876,546                                   |
| 3.7                                | 115                       | 2,136,428                      | 20,905                                 | 3.6                                | 19                                     | 37                            | 724,109                                   |
| 3.3                                | 101                       | 1,839,098                      | 20,106                                 | 3.2                                | 17                                     | 34                            | 641,723                                   |
| 3.1                                | 90                        | 1,662,293                      | 19,342                                 | 2.9                                | 17                                     | 32                            | 592,104                                   |
| 2.9                                | 83                        | 1,550,272                      | 18,385                                 | 2.7                                | 16                                     | 31                            | 563,811                                   |
| -----                              |                           |                                |  |                                    |  |                               |   |
| 2.6                                | 77                        | 1,423,737                      | 17,845                                 | 2.5                                | 15                                     | 29                            | 512,314                                   |
| 2.5                                | 70                        | 1,333,387                      | 17,054                                 | 2.2                                | 13                                     | 27                            | 467,326                                   |
| 2.3                                | 67                        | 1,236,304                      | 16,373                                 | 2.0                                | 12                                     | 25                            | 430,539                                   |
| 2.1                                | 65                        | 1,104,978                      | 15,006                                 | 1.8                                | 10                                     | 24                            | 397,414                                   |
| 1.8                                | 62                        | 878,461                        | 12,535                                 | 1.4                                | 7                                      | 21                            | 352,630                                   |

**Cost Control**

| Grain<br>Bought<br>Per Cow<br>(10) | % Grain is<br>of Milk<br>Receipts<br>(10) | Machinery<br>Costs<br>Per Cow<br>(11) | Labor &<br>Machinery<br>Costs Per Cow<br>(11) | Feed & Crop<br>Expenses<br>Per Cow<br>(10) | Feed & Crop<br>Expenses Per<br>Cwt. Milk<br>(10) |
|------------------------------------|---|---------------------------------------|---|--|--|
| \$ 311                             | 14%                                       | \$223                                 | \$ 620  | \$ 442                                     | \$3.02   |
| 411                                | 20  | 316                                   | 747   | 580  | 3.60   |
| 506                                | 22  | 369                                   | 824   | 656  | 3.79   |
| 568                                | 24  | 412                                   | 887   | 707  | 4.04   |
| 636                                | 26  | 426                                   | 945   | 811  | 4.41   |
| -----                              |   |                                       |   |  |  |
| 710                                | 28  | 447                                   | 1,014   | 875  | 4.64   |
| 807                                | 31  | 489                                   | 1,075   | 953  | 4.93   |
| 870                                | 34  | 523                                   | 1,122   | 1,004                                      | 5.19   |
| 925                                | 37  | 563                                   | 1,197   | 1,058                                      | 5.60   |
| 1,054                              | 42  | 718                                   | 1,372   | 1,245                                      | 6.51   |

**Value and Cost of Production**

**Profitability**

| Milk<br>Receipts<br>Per Cow<br>(10) | Oper. Cost<br>Milk<br>Per Cwt.<br>(10) | Total Cost<br>Production<br>Per Cwt.<br>(10) | Net Farm Income<br>With<br>Apprec.<br>(3) |          | Without<br>Apprec.<br>(3) | Labor &<br>Mgmt. Inc.<br>Per Oper.<br>(3) | Change in<br>Net Worth<br>w/Apprec.<br>(6) |
|-------------------------------------|--|--|---|----------|---------------------------|---|--|
| \$3,093                             | \$ 6.72                                | \$11.87                                      | \$108,267                                 | \$91,353 | \$43,558                  | \$82,187                                  |  |
| 2,821                               | 7.90                                   | 12.73  | 74,747                                    | 65,766   | 28,599                    | 41,744                                    |  |
| 2,690                               | 8.52                                   | 13.29  | 62,248                                    | 55,029   | 23,048                    | 32,305                                    |  |
| 2,590                               | 9.10                                   | 13.68  | 53,294                                    | 43,685   | 18,555                    | 25,438                                    |  |
| 2,465                               | 9.66                                   | 14.21  | 45,675                                    | 37,569   | 9,783                     | 15,961                                    |  |
| -----                               |  |  |   |          |                           |   |  |
| 2,394                               | 10.37                                  | 14.75  | 34,976                                    | 28,776   | 4,808                     | 8,831                                     |  |
| 2,265                               | 10.88                                  | 15.42  | 27,816                                    | 19,963   | -1,813                    | 4,654                                     |  |
| 2,159                               | 11.34                                  | 15.91  | 19,825                                    | 12,165   | -7,608                    | -157                                      |  |
| 2,013                               | 11.76                                  | 16.56  | 11,517                                    | 2,831    | -17,446                   | -6,447                                    |  |
| 1,699                               | 12.91                                  | 18.29  | -9,556                                    | -20,251  | -43,084                   | -39,646                                   |  |



**FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS**  
59 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1992

| <u>Size of Business</u> |      |           | <u>Rates of Production</u> |          |          | <u>Labor Efficiency</u> |            |
|-------------------------|------|-----------|----------------------------|----------|----------|-------------------------|------------|
| Worker                  | No.  | Pounds    | Pounds                     | Tons     | Tons     | Cows                    | Pounds     |
| Equiv-                  | of   | Milk      | Milk Sold                  | Hay Crop | Silage   | Per                     | Milk Sold  |
| alent                   | Cows | Sold      | Per Cow                    | DM/Acre  | Per Acre | Worker                  | Per Worker |
| (11) *                  | (11) | (11)      | (10)                       | (9)      | (9)      | (11)                    | (11)       |
| 4.5                     | 118  | 2,318,393 | 23,226                     | 5.7      | 21       | 53                      | 872,689    |
| 3.7                     | 108  | 2,025,486 | 20,742                     | 3.9      | 19       | 42                      | 770,827    |
| 3.4                     | 104  | 1,905,776 | 20,075                     | 3.4      | 18       | 37                      | 688,683    |
| 3.3                     | 97   | 1,812,755 | 19,485                     | 3.2      | 16       | 34                      | 603,386    |
| 3.1                     | 91   | 1,697,486 | 18,584                     | 2.9      | 15       | 32                      | 571,158    |
| -----                   |      |           |                            |          |          |                         |            |
| 2.7                     | 86   | 1,557,311 | 18,036                     | 2.6      | 14       | 29                      | 538,989    |
| 2.5                     | 80   | 1,351,124 | 17,504                     | 2.3      | 12       | 27                      | 488,313    |
| 2.2                     | 72   | 1,173,922 | 16,043                     | 2.0      | 10       | 25                      | 433,176    |
| 2.0                     | 62   | 1,022,537 | 13,200                     | 1.8      | 8        | 23                      | 360,361    |
| 1.4                     | 45   | 651,669   | 11,685                     | 1.3      | 3        | 15                      | 270,409    |

Cost Control

| Grain   | % Grain is | Machinery | Labor &       | Feed & Crop | Feed & Crop  |
|---------|------------|-----------|---------------|-------------|--------------|
| Bought  | of Milk    | Costs     | Machinery     | Expenses    | Expenses Per |
| Per Cow | Receipts   | Per Cow   | Costs Per Cow | Per Cow     | Cwt. Milk    |
| (10)    | (10)       | (11)      | (11)          | (10)        | (10)         |
| \$ 374  | 16%        | \$264     | \$ 679        | \$ 529      | \$3.36       |
| 488     | 20         | 376       | 810           | 653         | 3.83         |
| 551     | 23         | 406       | 872           | 708         | 4.24         |
| 605     | 26         | 448       | 933           | 803         | 4.50         |
| 658     | 28         | 490       | 1,011         | 864         | 4.83         |
| -----   |            |           |               |             |              |
| 705     | 30         | 538       | 1,097         | 924         | 5.10         |
| 749     | 31         | 592       | 1,183         | 998         | 5.26         |
| 827     | 33         | 644       | 1,290         | 1,066       | 5.56         |
| 900     | 35         | 692       | 1,449         | 1,109       | 6.29         |
| 974     | 39         | 875       | 1,741         | 1,186       | 6.91         |

| <u>Value and Cost of Production</u> |            |            | <u>Profitability</u>   |          |            |           |
|-------------------------------------|------------|------------|------------------------|----------|------------|-----------|
| Milk                                | Oper. Cost | Total Cost | <u>Net Farm Income</u> |          | Labor &    | Change in |
| Receipts                            | Milk       | Production | With                   | Without  | Mgmt. Inc. | Net Worth |
| Per Cow                             | Per Cwt.   | Per Cwt.   | Apprec.                | Apprec.  | Per Oper.  | w/Apprec. |
| (10)                                | (10)       | (10)       | (3)                    | (3)      | (3)        | (6)       |
| \$3,115                             | \$ 6.33    | \$11.89    | \$179,031              | \$86,712 | \$51,557   | \$133,449 |
| 2,801                               | 8.39       | 13.23      | 79,233                 | 61,053   | 22,625     | 55,877    |
| 2,718                               | 9.37       | 14.13      | 63,081                 | 48,995   | 10,907     | 38,686    |
| 2,626                               | 9.78       | 14.97      | 51,912                 | 36,234   | 6,110      | 27,392    |
| 2,534                               | 10.13      | 15.66      | 41,056                 | 25,578   | 1,978      | 19,985    |
| -----                               |            |            |                        |          |            |           |
| 2,451                               | 10.57      | 16.07      | 34,711                 | 18,848   | - 689      | 13,594    |
| 2,353                               | 11.17      | 16.67      | 28,891                 | 15,569   | - 4,932    | 5,705     |
| 2,186                               | 11.72      | 17.68      | 22,662                 | 9,092    | -15,149    | -4,431    |
| 1,895                               | 12.99      | 18.98      | 7,870                  | - 9,009  | -26,857    | -13,164   |
| 1,694                               | 14.79      | 20.47      | -22,606                | -36,917  | -65,994    | -46,141   |

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**  
84 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1992

| Size of Business  |             |                     | Rates of Production      |                       |                           | Labor Efficiency |                             |
|-------------------|-------------|---------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | No. of Cows | Pounds of 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 |
| (11)*             | (11)        | (11)                | (10)                     | (9)                   | (9)                       | (11)             | (11)                        |
| 17.8              | 827         | 16,288,987          | 22,717                   | 5.0                   | 21                        | 60               | 1,138,851                   |
| 8.4               | 370         | 7,526,000           | 21,818                   | 4.1                   | 18                        | 47               | 899,158                     |
| 7.3               | 280         | 5,563,510           | 21,355                   | 3.6                   | 17                        | 44               | 845,337                     |
| 6.2               | 234         | 4,442,314           | 20,495                   | 3.3                   | 16                        | 42               | 805,033                     |
| 5.8               | 205         | 3,922,439           | 19,777                   | 3.0                   | 16                        | 40               | 760,845                     |
| 5.2               | 190         | 3,626,910           | 19,160                   | 2.8                   | 15                        | 37               | 731,079                     |
| 4.8               | 173         | 3,324,340           | 18,228                   | 2.6                   | 14                        | 35               | 690,044                     |
| 4.3               | 158         | 3,036,766           | 17,535                   | 2.4                   | 13                        | 33               | 647,088                     |
| 3.8               | 145         | 2,675,565           | 16,783                   | 2.2                   | 11                        | 31               | 598,697                     |
| 3.2               | 128         | 2,294,285           | 14,619                   | 1.8                   | 7                         | 27               | 492,796                     |

**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 |
|----------------------|-----------------------------|-------------------------|---------------------------------|------------------------------|------------------------------------|
| (10)                 | (10)                        | (11)                    | (11)                            | (10)                         | (10)                               |
| \$ 411               | 15%                         | \$259                   | \$ 713                          | \$ 644                       | \$3.19                             |
| 556                  | 21                          | 320                     | 810                             | 765                          | 3.86                               |
| 618                  | 24                          | 366                     | 850                             | 803                          | 4.17                               |
| 667                  | 25                          | 397                     | 879                             | 819                          | 4.41                               |
| 701                  | 27                          | 421                     | 924                             | 873                          | 4.55                               |
| 728                  | 28                          | 441                     | 1,001                           | 910                          | 4.70                               |
| 768                  | 30                          | 479                     | 1,037                           | 937                          | 4.90                               |
| 804                  | 31                          | 513                     | 1,099                           | 982                          | 5.12                               |
| 861                  | 33                          | 553                     | 1,185                           | 1,038                        | 5.44                               |
| 960                  | 38                          | 691                     | 1,339                           | 1,141                        | 6.23                               |

**Value and Cost of Production**

**Profitability**

| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income  |                     | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
|-----------------------|--------------------------|--------------------------------|------------------|---------------------|------------------------------|-------------------------------|
| (10)                  | (10)                     | (10)                           | With Apprec. (3) | Without Apprec. (3) | (3)                          | (6)                           |
| \$3,137               | \$ 7.56                  | \$11.30                        | \$556,579        | \$437,174           | \$266,126                    | \$368,663                     |
| 2,978                 | 8.92                     | 12.22                          | 219,914          | 202,962             | 78,676                       | 133,568                       |
| 2,893                 | 9.56                     | 12.99                          | 152,924          | 127,718             | 43,360                       | 85,566                        |
| 2,792                 | 10.27                    | 13.36                          | 117,022          | 95,001              | 33,386                       | 57,664                        |
| 2,701                 | 10.82                    | 13.66                          | 100,788          | 79,566              | 21,848                       | 41,655                        |
| 2,597                 | 11.10                    | 13.92                          | 85,282           | 55,575              | 10,659                       | 25,685                        |
| 2,486                 | 11.30                    | 14.55                          | 53,580           | 37,649              | -1,813                       | 16,246                        |
| 2,365                 | 11.65                    | 15.37                          | 35,584           | 19,581              | -12,922                      | -1,307                        |
| 2,297                 | 12.24                    | 16.26                          | 22,661           | -954                | -34,149                      | -34,827                       |
| 2,024                 | 13.58                    | 17.28                          | -29,806          | -56,453             | -79,753                      | -96,233                       |

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

**IDENTIFY AND SET GOALS**

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

1. Goals should be Specific.
2. Goals should be Measurable.
3. Goals should be Achievable but challenging.
4. Goals should be Rewarding.
5. You should designate a Time when each goal will be achieved.

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

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

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

- a. Begin with a mission statement which describes why the business exists based on the preferences and values of the owners.
- b. Identify 4-6 objectives.
- c. Identify SMART goals.

**Worksheet for Setting Goals**

**I. Mission and Objectives**

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**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 3)
- Accrual Receipts** - (defined on page 4)
- Annual Cash Flow Statement** - (defined on page 12)
- Appreciation** - (defined on page 5)
- 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 14)
- Cash Paid** - (defined on page 2)
- Cash Receipts** - (defined on page 4)
- Change in Accounts Payable** - (defined on page 3)
- Change in Accounts Receivable** - (defined on page 4)
- Change in Inventory** - (defined on page 2)
- Current Portion** - (defined on page 7)
- Dairy (farm)** - A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.
- Dairy Cash-Crop (farm)** - Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed 10 percent of accrual milk receipts.
- Debt Per Cow** - Total end-of-year debt divided by end-of-year number of cows.
- Debt to Asset Ratios** - (defined on page 10)
- Deferred Taxes** - (defined on page 9)
- 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 14.

**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.

**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.

**Labor and Management Income** - (defined on page 6)

**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.

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

**Net Farm Income** - (defined on page 5)

**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 19)

**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; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

**Part-Time Cash-Crop Dairy (farm)** - Operating and managing this farm is not a full-time occupation, crop sales exceed 10 percent of accrual milk receipts and cropland is owned.

**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 19)

**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 7)

**Return on Total Capital** - (defined on page 7)

**Return to Operators' Labor, Management, and Equity Capital** - (defined on page 6)

**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 19)

**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.

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