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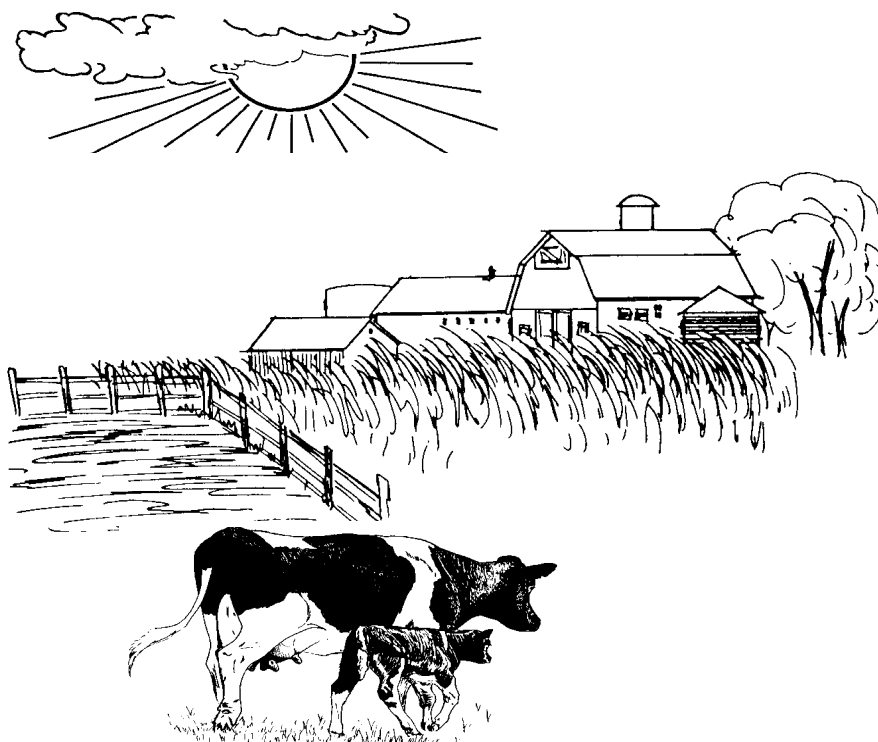
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***DAIRY FARM
BUSINESS SUMMARY***

***WESTERN AND
CENTRAL PLATEAU
REGION
1998***



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1998 DAIRY FARM BUSINESS SUMMARY
Western and Central Plateau Region
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1998 DAIRY FARM BUSINESS SUMMARY WESTERN AND CENTRAL PLATEAU REGION*

INTRODUCTION

Dairy farm managers throughout New York State have been participating in Cornell Cooperative Extension's farm business summary and analysis program since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of their farm business. The information in this report represents averages of the data submitted from dairy farms in the Western and Central Plateau Region for 1998.

Program Objective

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

Format Features

This regional report follows the same general format as the 1998 DFBS individual farm report received by 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. The individual farm data, the regional averages and other data can then be used to establish goals for the business. 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;
- (7) a capital and labor efficiency analysis; and
- (8) progress of the farm business over the past two years.

*This summary was prepared by Wayne A. Knoblauch, Department of Agricultural, Resource, and Managerial Economics, College of Agriculture and Life Sciences, Cornell University, in cooperation with Cooperative Extension Educators Carl Crispell, Joan Petzen, Jim Grace, Andrew Dufresne; and Program Assistant Greg Albrecht. The Western and Central Plateau region, with the number of participating farms in parentheses is comprised of Allegany (10), Cattaraugus (3), Chautauqua (8), Steuben (15), Chemung (2), Schuyler (4), Tioga (3), Tompkins (9), Cortland (6) and Broome (0) Counties. Linda Putnam was in charge of data analysis. Faye Butts prepared the publication.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

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

BUSINESS CHARACTERISTICS
60 Western and Central Plateau Region Dairy Farms, 1998

| Type of Farm | Number | Milking System | Number |
|---------------------------------|--------|------------------------|--------|
| Dairy | 60 | Bucket & carry | 1 |
| Part-time dairy | 0 | Dumping station | 4 |
| Dairy cash-crop | 0 | Pipeline | 24 |
| Certified organic milk producer | 1 | Herringbone parlor | 23 |
| Rotational grazing farm | 25 | Other parlor | 8 |
| Type of Ownership | Number | Production Records | Number |
| Owner | 52 | DHIC | 43 |
| Renter | 8 | Owner-Sampler | 5 |
| | | Other | 7 |
| | | None | 5 |
| Type of Business | Number | bST Usage | Number |
| Sole Proprietorship | 45 | Used on <25% of herd | 7 |
| Partnership | 13 | Used on 25-75% of herd | 12 |
| Corporation | 2 | Used on >75% of herd | 4 |
| | | Stopped using in 1998 | 4 |
| | | Not used in 1998 | 33 |
| Type of Barn | Number | Business Record System | Number |
| Stanchion or Tie-Stall | 25 | Account Book | 24 |
| Freestall | 31 | AgriFax (mail-in only) | 8 |
| Combination | 4 | On-farm computer | 23 |
| | | Other | 5 |
| Milking Frequency | Number | | |
| 2 times per day | 52 | | |
| 3 times per day | 6 | | |
| Other | 2 | | |

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 1998.

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
60 Western and Central Plateau Region Dairy Farms, 1998

| Expense Item | Cash Paid | - | Change in Inventory or Prepaid Expense | + | Change in Accounts Payable | = | Accrual Expenses |
|---------------------------------------|--------------|---|---|----|----------------------------------|---|---------------------|
| <u>Hired Labor</u> | \$ 41,921 | | \$ 122 | << | \$ -28 | | \$ 41,770 |
| <u>Feed</u> | | | | | | | |
| Dairy grain & concentrate | 94,701 | | 1,721 | | -3,432 | | 89,549 |
| Dairy roughage | 4,668 | | -147 | | 5 | | 4,820 |
| Nondairy | 341 | | 10 | | 0 | | 331 |
| <u>Machinery</u> | | | | | | | |
| Machinery hire, rent & lease | 5,974 | | 0 | << | -104 | | 5,870 |
| Machinery repairs & farm vehicle exp. | 21,838 | | 146 | | -126 | | 21,566 |
| Fuel, oil & grease | 6,854 | | 86 | | -70 | | 6,697 |
| <u>Livestock</u> | | | | | | | |
| Replacement livestock | 2,258 | | 0 | << | 123 | | 2,381 |
| Breeding | 4,192 | | 3 | | 32 | | 4,221 |
| Veterinary & medicine | 9,195 | | 25 | | 57 | | 9,227 |
| Milk marketing | 10,463 | | 0 | << | 0 | | 10,463 |
| Bedding | 2,992 | | 75 | | -8 | | 2,908 |
| Milking supplies | 9,209 | | 205 | | -15 | | 8,988 |
| Cattle lease & rent | 378 | | 0 | << | -1 | | 377 |
| Custom boarding | 1,462 | | 0 | << | 0 | | 1,462 |
| bST | 3,151 | | 62 | | 5 | | 3,094 |
| Other livestock expense | 4,122 | | 63 | | -37 | | 4,022 |
| <u>Crops</u> | | | | | | | |
| Fertilizer & lime | 8,323 | | 617 | | 51 | | 7,758 |
| Seeds & plants | 6,608 | | 1,029 | | 170 | | 5,749 |
| Spray, other crop expense | 6,171 | | 359 | | -171 | | 5,641 |
| <u>Real Estate</u> | | | | | | | |
| Land, building & fence repair | 6,466 | | -11 | | 146 | | 6,623 |
| Taxes | 7,800 | | 200 | << | 104 | | 7,704 |
| Rent & lease | 8,883 | | 2 | << | -753 | | 8,128 |
| <u>Other</u> | | | | | | | |
| Insurance | 5,474 | | 138 | << | -9 | | 5,327 |
| Utilities (farm share) | 9,645 | | 0 | << | 72 | | 9,717 |
| Interest paid | 20,642 | | 0 | << | 0 | | 20,642 |
| Miscellaneous | 5,070 | | -13 | | 99 | | 5,182 |
| Total Operating | \$308,799 | | \$ 4,692 | | \$ -3,889 | | \$ 300,218 |
| Expansion livestock | 2,168 | | 0 | << | 17 | | 2,185 |
| Machinery depreciation | | | | | | | 20,415 |
| Building depreciation | | | | | | | 11,672 |
| TOTAL ACCRUAL EXPENSES | | | | | | | \$ 334,490 |

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

Change in accounts payable: An increase in accounts payable from beginning to end of year is added when calculating accrual expenses because these expenses were incurred (resources used) in 1998 but not paid for. A decrease is subtracted because it represents payment for resources used before 1998.

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

CASH AND ACCRUAL FARM RECEIPTS
60 Western and Central Plateau Region Dairy Farms, 1998

| Receipt Item | Cash Receipts | + | Change in Inventory | + | Change in Accounts Receivable | = | Accrual Receipts |
|--------------------------------|------------------|-----|------------------------|---|-------------------------------------|-----|---------------------|
| Milk sales | \$ 353,275 | | | | \$ 6,274 | | \$ 359,549 |
| Dairy cattle | 12,631 | | \$ 3,116 | | 93 | | 15,840 |
| Dairy calves | 2,444 | | | | 0 | | 2,444 |
| Other livestock | 361 | | -122 | | 0 | | 239 |
| Crops | 2,910 | | 5,717 | | -2 | | 8,625 |
| Government receipts | 5,063 | | 66 * | | 125 | | 5,254 |
| Custom machine work | 823 | | | | 47 | | 869 |
| Gas tax refund | 90 | | | | 0 | | 90 |
| Other | 4,239 | | | | 160 | | 4,399 |
| Less nonfarm noncash capital** | | (-) | 146 ** | | | (-) | 146 |
| Total Receipts | \$ 381,837 | | \$ 8,631 | | \$ 6,697 | | \$ 397,165 |

*Change in advanced government receipts.

**Gifts or inheritances of cattle or crops included in inventory.

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

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An increase in advanced government receipts is subtracted from cash income because it represents income received in 1998 for the 1999 crop year in excess of funds earned for 1998. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1998 but received in 1997.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. Payments in January 1999 for milk produced in December 1998 compared to January 1998 payments for milk produced in 1997 are included as a change in accounts receivable in determining accrual milk sales.

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

Profitability Analysis

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

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

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

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

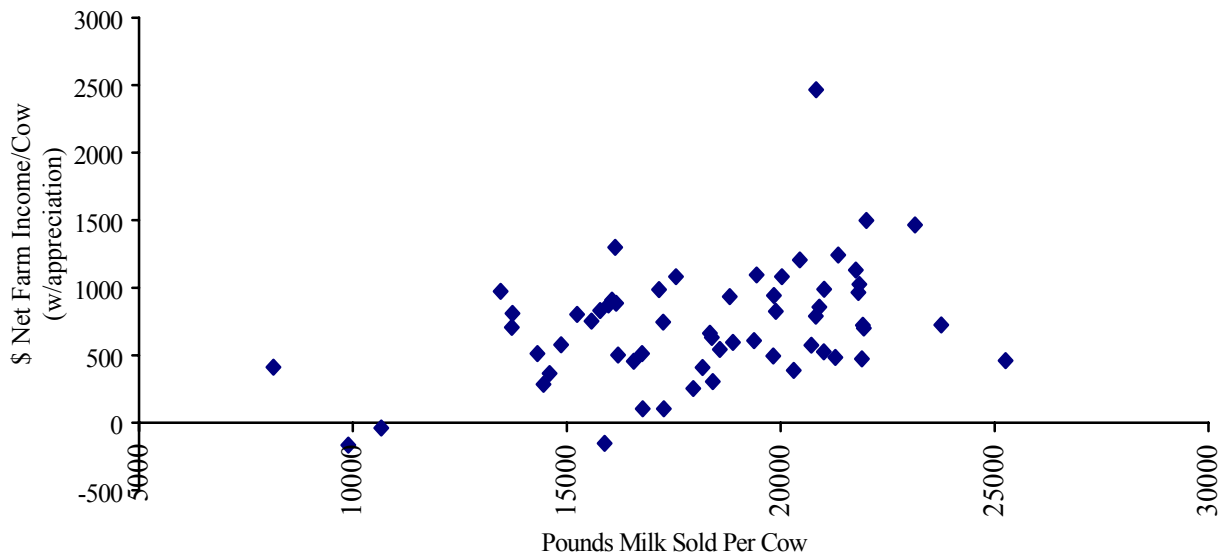
Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes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

NET FARM INCOME
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | | My Farm | |
|--|------------|---------|----------|----------|
| | Total | Per Cow | Total | Per Cow |
| Total accrual receipts | \$ 397,165 | | \$ _____ | |
| Appreciation: Livestock | 3,348 | | _____ | |
| Machinery | 5,646 | | _____ | |
| Real Estate | 9,450 | | _____ | |
| Other Stock & Certificates | 1,106 | | _____ | |
| Total Including Appreciation | \$ 416,715 | | \$ _____ | |
| Total accrual expenses | - 334,490 | | - _____ | |
| Net Farm Income (with appreciation) | \$ 82,225 | \$ 680 | \$ _____ | \$ _____ |
| Net Farm Income (without appreciation) | \$ 62,675 | \$ 518 | \$ _____ | \$ _____ |

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
60 Western and Central Plateau Region Dairy Farms, 1998



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

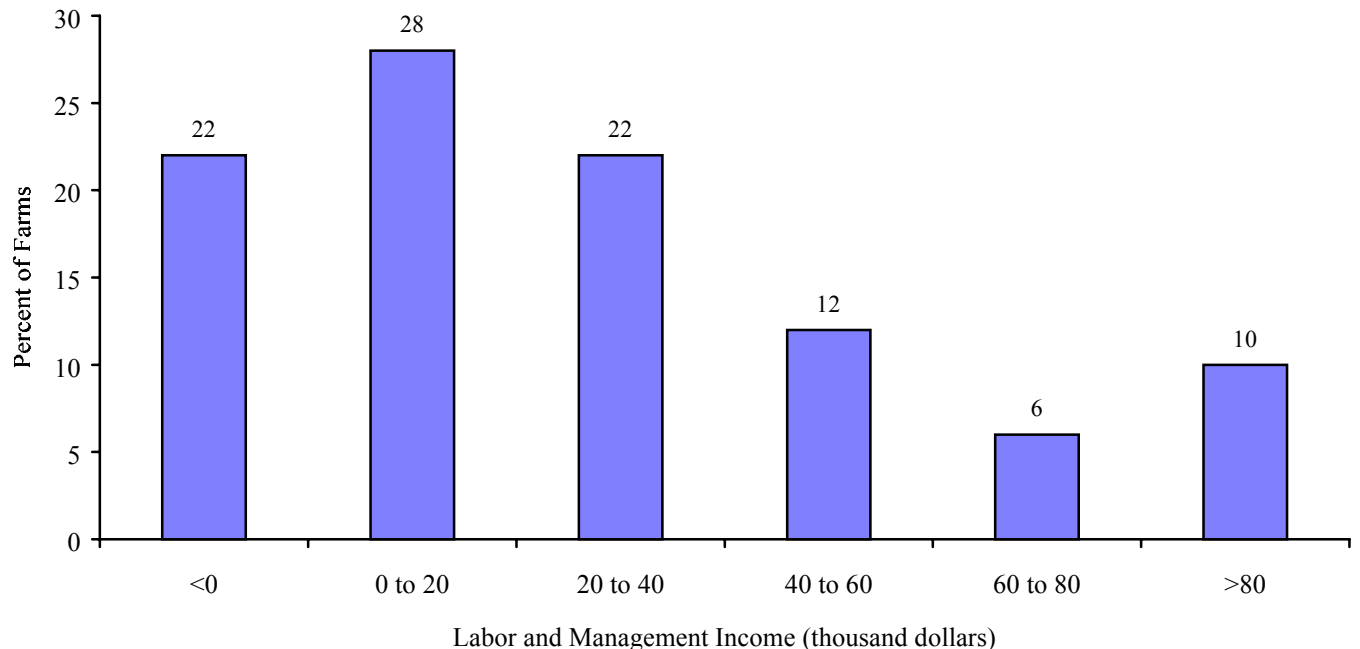
LABOR AND MANAGEMENT INCOME
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | My Farm |
|---|-----------|----------|
| Net farm income without appreciation | \$ 62,675 | \$ _____ |
| Family labor unpaid @ \$1,600 per month | - 4,160 | - _____ |
| Interest on \$505,505 average equity capital @ 5% real rate | - 25,275 | - _____ |
| Labor & Management Income per farm (1.39 Operators/farm) | \$ 33,240 | \$ _____ |
| Labor & Management Income per Operator/Manager | \$ 23,914 | \$ _____ |

Labor and management income per operator averaged \$23,914 on these 60 farms in 1998. The range in labor and management income per operator was from about \$-90,000 to more than \$304,000. Returns to labor and management were negative on 22% of the farms. Labor and management income per operator was between \$0 and \$40,000 on 50% of the farms while 28% showed labor and management incomes of \$40,000 or more per operator.

DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR

60 Western and Central Plateau Region Dairy Farms, 1998



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

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | My Farm |
|---|-----------------|----------|
| Net farm income with appreciation | \$ 82,225 | \$ _____ |
| Family labor unpaid @\$1,600 per month | - 4,160 | - _____ |
| Value of operators' labor & management | - <u>35,811</u> | - _____ |
| Return on equity capital with appreciation | \$ 42,254 | \$ _____ |
| Interest paid | + <u>20,642</u> | + _____ |
| Return on total capital with appreciation | \$ 62,896 | \$ _____ |
| Return on equity capital without appreciation | \$ 22,704 | \$ _____ |
| Return on total capital without appreciation | \$ 43,346 | \$ _____ |
| Rate of return on average equity capital: | | |
| with appreciation | 8.4% | _____ % |
| without appreciation | 4.5% | _____ % |
| Rate of return on average total capital: | | |
| with appreciation | 8.0% | _____ % |
| without appreciation | 5.5% | _____ % |

Farm and Family Financial Status

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

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 1998, lease payments were discounted by 8.75 percent to obtain their present value.

Advanced government receipts are included as current liabilities. Government payments received in 1998 that are for participation in the 1999 program are the end year balance and payments received in 1997 for participation in the 1998 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.

1998 FARM BUSINESS & NONFARM BALANCE SHEET
60 Western and Central Plateau Region Dairy Farms, 1998

| Farm Assets | Jan. 1 | Dec. 31 | Farm Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|----------------------------------|--------------|--------------|---------------------------------|--------------|--------------|
| <u>Current</u> | | | <u>Current</u> | | |
| Farm cash, checking & savings | \$ 7,279 | \$ 8,347 | Accounts payable | \$ 17,790 | \$ 13,917 |
| Accounts receivable | 22,418 | 29,115 | Operating debt | 9,920 | 9,703 |
| Prepaid expenses | 117 | 580 | Short Term | 5,288 | 5,393 |
| Feed & supplies | 63,625 | 73,571 | Advanced govt. receipts | 116 | 50 |
| | | | Current Portion: | | |
| | | | Intermediate | 24,783 | 26,729 |
| | | | Long Term | <u>6,653</u> | <u>7,488</u> |
| Total Current | \$ 93,439 | \$ 111,613 | Total Current | \$ 64,549 | \$ 63,279 |
| <u>Intermediate</u> | | | <u>Intermediate</u> | | |
| Dairy cows: | | | Structured debt | | |
| owned | \$ 124,659 | \$ 129,845 | 1-10 years | \$ 104,652 | \$ 116,056 |
| leased | 604 | 791 | Financial lease | | |
| Heifers | 56,198 | 57,582 | (cattle/machinery) | 3,004 | 5,087 |
| Bulls & other livestock | 1,407 | 1,179 | Farm Credit stock | <u>2,371</u> | <u>2,550</u> |
| Mach. & equip. owned | 146,855 | 161,468 | Total Intermediate | \$ 110,027 | \$ 123,693 |
| Mach. & equip. leased | 2,400 | 4,296 | | | |
| Farm Credit stock | 2,371 | 2,550 | | | |
| Other stock/certificate | <u>6,335</u> | <u>7,540</u> | | | |
| Total Intermediate | \$ 340,829 | \$ 365,251 | | | |
| <u>Long Term</u> | | | <u>Long Term</u> | | |
| Land & buildings: | | | Structured debt | | |
| owned | \$ 322,174 | \$ 333,394 | >10 years | \$ 100,380 | \$ 94,303 |
| leased | <u>5,799</u> | <u>4,053</u> | Financial lease | | |
| Total Long Term | \$ 328,513 | \$ 337,447 | (structures) | <u>5,799</u> | <u>4,053</u> |
| | | | Total Long Term | \$ 106,179 | \$ 98,356 |
| | | | | | |
| Total Farm Assets | \$ 762,781 | \$ 814,311 | Total Farm Liab. | \$ 280,755 | \$ 285,328 |
| | | | FARM NET WORTH | \$ 482,026 | \$ 528,983 |

Nonfarm Assets, Liabilities & Net Worth (Average of 43 farms reporting)

| Assets | Jan. 1 | Dec. 31 | Liabilities & Net Worth | Jan. 1 | Dec. 31 |
|--------------------------------------|---------------|---------------|-------------------------|-----------|-----------|
| Personal cash, checking & savings | \$ 3,819 | \$ 6,008 | Nonfarm Liabilities | \$ 5,544 | \$ 7,275 |
| Cash value life insurance | 12,549 | 12,703 | | | |
| Nonfarm real estate | 13,998 | 14,562 | | | |
| Auto (personal share) | 4,866 | 4,927 | | | |
| Stocks & bonds | 20,260 | 22,306 | | | |
| Household furnishings | 11,574 | 12,009 | | | |
| All other nonfarm assets | <u>15,520</u> | <u>13,076</u> | | | |
| Total Nonfarm Assets | \$ 82,586 | \$ 85,591 | NONFARM NET WORTH | \$ 77,042 | \$ 78,316 |

| Farm & Nonfarm Assets, Liabilities, and Net Worth* | Jan. 1 | Dec. 31 |
|--|----------------|----------------|
| Total Assets | \$ 845,367 | \$ 899,902 |
| Total Liabilities | <u>286,299</u> | <u>292,603</u> |
| TOTAL FARM & NONFARM NET WORTH | \$ 559,068 | \$ 607,299 |

*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 on the date of 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 carry-over 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. The dramatic impact of including deferred taxes is clear. Total liabilities were increased 59 percent on these 6 farms by including deferred taxes.

Deferred taxes on these six farms totaled an average of \$305,913, roughly one-third of the pretax net worth. Net worth decreased from 63 percent to 43 percent when deferred taxes are included on these farms. When examining net worth, especially as a source of cash for retirement or other purposes, deferred taxes become an important consideration. Deferred taxes in this calculation specify that all assets were sold during one tax year. Therefore, tax management strategies such as making sales in more than one year or installment sales warrant careful consideration to reduce income tax liabilities.

CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES

December 31, 1998

6 New York Dairy Farms, 1998

| Assets | | Liabilities & Net Worth | |
|------------------------|-------------------|--------------------------------|----------------|
| | | Current debts & payables | \$ 110,688 |
| | | Current deferred taxes | <u>60,728</u> |
| Total Current Assets | \$ 198,183 | Total Current Liabilities | \$ 171,416 |
| | | Intermediate debts & leases | \$ 196,519 |
| | | Intermediate deferred taxes | <u>165,443</u> |
| Total Inter. Assets | \$ 703,305 | Total Intermediate Liabilities | \$ 361,962 |
| | | Long term debts & leases | \$ 215,577 |
| | | Long term deferred taxes | <u>79,742</u> |
| Total Long Term Assets | <u>\$ 531,142</u> | Total Long Term Liabilities | \$ 295,319 |
| TOTAL FARM ASSETS | \$ 1,432,630 | TOTAL FARM LIABILITIES | \$ 828,697 |
| | | Farm Net Worth | \$ 603,933 |
| | | Percent Equity (Farm) | 42 |
| <hr/> | | | |
| | | Nonfarm debts | \$ 1,250 |
| | | Nonfarm deferred taxes | <u>13,287</u> |
| Total Nonfarm Assets | \$ 48,538 | Total Nonfarm Liabilities | \$ 14,537 |
| <hr/> | | | |
| TOTAL ASSETS | \$ 1,481,168 | TOTAL LIABILITIES | \$ 843,234 |
| | | Total Net Worth | \$ 637,934 |
| | | Percent Equity (Total) | 43% |

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

BALANCE SHEET ANALYSIS
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | My Farm | | |
|---|--------------------------------|--------------------------------|----------------|--------------------------------|
| <u>Financial Ratios - Farm:</u> | | | | |
| Percent equity | 65% | _____ % | | |
| Debt/asset ratio: total | 0.35 | _____ | | |
| long-term | 0.29 | _____ | | |
| intermediate/current | 0.39 | _____ | | |
| Current Ratio: | 1.76 | | | |
| Working capital \$48,334 | As % of total Expenses: 14% | | | |
| <u>Farm Debt Analysis:</u> | | | | |
| Accounts payable as % of total debt | 5% | _____ % | | |
| Long-term liabilities as a % of total debt | 34% | _____ % | | |
| Current & inter. liabilities as a % of total debt | 66% | _____ % | | |
| <u>Farm Debt Levels:</u> | | | | |
| | <u>Per Cow</u> | <u>Per Tillable Acre Owned</u> | <u>Per Cow</u> | <u>Per Tillable Acre Owned</u> |
| Total farm debt | \$ 2,320 | \$ 1,315 | \$ _____ | \$ _____ |
| Long-term debt | 800 | 453 | _____ | _____ |
| Intermediate & long term | 1,805 | 1,023 | _____ | _____ |
| Intermediate & current debt | 1,520 | 862 | _____ | _____ |

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
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average of Region's Farms | |
|-------------------------|---------------------------|-----------------------|
| | Real Estate | Machinery & Equipment |
| Value beginning of year | \$ 322,714 | \$ 146,855 |
| Purchases | \$ 18,175* | \$ 30,971 |
| Gift & inheritance | + 353 | + 0 |
| Lost capital | - 4,730 | |
| Sales | - 897 | - 1,589 |
| Depreciation | - 11,672 | - 20,415 |
| Net investment | = 1,230 | = 8,967 |
| Appreciation | + 9,450 | + 5,646 |
| Value end of year | \$ 333,394 | \$ 161,468 |

*\$3,833 land and \$14,342 buildings and/or depreciable improvements.

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

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

STATEMENT OF OWNER EQUITY (RECONCILIATION)
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | My Farm |
|--|-----------------|------------|
| Beginning of year farm net worth | \$ 482,026 | \$ _____ |
| Net farm income w/o appreciation | \$ 62,675 | \$ _____ |
| +Nonfarm cash income | + 9,560 | + _____ |
| -Personal withdrawals & family expenditures excluding nonfarm borrowings | <u>- 39,912</u> | - _____ |
| RETAINED EARNINGS | + \$ 32,323 | + \$ _____ |
| Nonfarm noncash transfers to farm | \$ 499 | \$ _____ |
| +Cash used in business from nonfarm capital | + 169 | + _____ |
| -Note or mortgage from farm real estate sold (nonfarm) | <u>- 0</u> | - _____ |
| CONTRIBUTED/WITHDRAWN CAPITAL | + \$ 668 | + \$ _____ |
| Appreciation | \$ 19,550 | \$ _____ |
| -Lost capital | <u>- 4,730</u> | - _____ |
| CHANGE IN VALUATION EQUITY | + \$ 14,820 | + \$ _____ |
| IMBALANCE/ERROR | <u>- 854</u> | - \$ _____ |
| End of year net worth* | = \$ 528,983 | = \$ _____ |
| <hr/> | | |
| <u>Change in Net Worth</u> | | |
| Without appreciation | \$ 27,407 | \$ _____ |
| With appreciation | \$ 46,957 | \$ _____ |

*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
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | |
|---|----------------|------------------|
| <u>Cash Flow from Operating Activities</u> | | |
| Cash farm receipts | \$ 381,837 | |
| - Cash farm expenses | <u>308,799</u> | |
| = Net cash farm income | | \$ 73,038 |
| Personal withdrawals & family expenses including nonfarm debt payments | \$ 41,755 | |
| - Nonfarm income | <u>9,560</u> | |
| - Net cash withdrawals from the farm | | <u>\$ 32,195</u> |
| = Net Provided by Operating Activities | | \$ 40,843 |
| <u>Cash Flow From Investing Activities</u> | | |
| Sale of assets: machinery | \$ 1,589 | |
| + real estate | 897 | |
| + other stock & cert. | <u>605</u> | |
| = Total asset sales | | \$ 3,091 |
| Capital purchases: expansion livestock | \$ 2,168 | |
| + machinery | 30,971 | |
| + real estate | 18,175 | |
| + other stock & cert. | <u>704</u> | |
| - Total invested in farm assets | | <u>\$ 52,018</u> |
| = Net Provided by Investment Activities | | \$ -48,927 |
| <u>Cash Flow From Financing Activities</u> | | |
| Money borrowed (intermediate & long term) | \$ 49,532 | |
| + Money borrowed (short term) | 2,702 | |
| + Increase in operating debt | 0 | |
| + Cash from nonfarm capital used in business | 169 | |
| + Money borrowed - nonfarm | <u>1,843</u> | |
| = Cash inflow from financing | | \$ 54,246 |
| Principal payments (intermediate & long term) | \$ 41,426 | |
| + Principal payments (short term) | 2,596 | |
| + Decrease in operating debt | <u>218</u> | |
| - Cash outflow for financing | | <u>\$ 44,240</u> |
| = Net Provided by Financing Activities | | \$ 10,006 |
| <u>Cash Flow From Reserves</u> | | |
| Beginning farm cash, checking & savings | | \$ 7,279 |
| - Ending farm cash, checking & savings | | <u>8,347</u> |
| = Net Provided from Reserves | | \$ -1,068 |
| Imbalance (error) | | \$ 854 |

ANNUAL CASH FLOW STATEMENT

| Item | My Farm | | |
|---|----------|----------|----------|
| <u>Cash Flow from Operating Activities</u> | | | |
| Cash farm receipts | \$ _____ | | |
| - Cash farm expenses | _____ | | |
| = Net cash farm income | | \$ _____ | |
| Personal withdrawals & family expenses including nonfarm debt payments | \$ _____ | | |
| - Nonfarm income | _____ | | |
| - Net cash withdrawals from the farm | | \$ _____ | |
| = 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 (intermediate & long term) | \$ _____ | | |
| + Money borrowed (short term) | _____ | | |
| + Increase in operating debt | _____ | | |
| + Cash from nonfarm capital used in business | _____ | | |
| + Money borrowed - nonfarm | _____ | | |
| = Cash inflow from financing | | \$ _____ | |
| Principal payments (intermediate & 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 | | | \$ _____ |
| Imbalance (error) | | | \$ _____ |

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 1998. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1999 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Same 47 Western and Central Plateau Region Dairy Farms, 1997 & 1998

| Debt Payments | Average | | | My Farm | | |
|--|---------------|-----------|-----------------|---------------|----------|-----------------|
| | 1998 Payments | | Planned 1999 | 1998 Payments | | Planned 1999 |
| | Planned | Made | | Planned | Made | |
| Long term | \$ 14,144 | \$ 14,361 | \$ 13,478 | \$ _____ | \$ _____ | \$ _____ |
| Intermediate term | 32,827 | 45,623 | 33,865 | _____ | _____ | _____ |
| Short term | 2,413 | 2,367 | 2,707 | _____ | _____ | _____ |
| Operating (net reduction) | 4,645 | 451 | 2,922 | _____ | _____ | _____ |
| Accounts payable (net reduction) | 2,998 | 6,025 | 1,461 | _____ | _____ | _____ |
| Total | \$ 57,027 | \$ 68,827 | \$ 54,433 | \$ _____ | \$ _____ | \$ _____ |
| Per cow | \$ 487 | \$ 588 | | \$ _____ | \$ _____ | |
| Per cwt. 1998 milk | \$ 2.53 | \$ 3.06 | | \$ _____ | \$ _____ | |
| Percent of total 1998 farm receipts | 15% | 18% | | _____ | _____ | |
| Percent of 1998 milk receipts | 16% | 20% | | _____ | _____ | |

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payment schedule. The ratios show the percentage of payments planned for 1998 (as of December 31, 1997) that could have been made with the amount available for debt service in 1998. Farmers who did not participate in DFBS in 1997 have their 1998 ratios based on planned debt payments for 1999.

COVERAGE RATIOS

Same 47 Western and Central Plateau Region Dairy Farms, 1997 & 1998

| Item | Average | Item | Average |
|---|-----------|---|----------|
| <u>Cash Flow Coverage Ratio</u> | | <u>Debt Coverage Ratio</u> | |
| Cash farm receipts | \$369,016 | Net farm income (w/o apprec.) | \$60,090 |
| - Cash farm expenses | 299,807 | + Depreciation | 30,613 |
| + Interest paid (cash) | 19,153 | + Interest paid (accrual) | 19,153 |
| - Net personal withdrawals from farm* | 26,152 | - Net personal withdrawals from farm | 26,152 |
| (A) = Amount Available for Debt Service | \$ 62,210 | (A') = Repayment Capacity | \$83,704 |
| (B) = Debt Payments Planned for 1998 (as of December 31, 1997) | \$ 57,027 | (B) = Debt Payments Planned for 1998 (as of December 31, 1997) | \$57,027 |
| (A/B)= Cash Flow Coverage Ratio for 1998 | 1.09 | (A'/B)= Debt Coverage Ratio for 1998 | 1.47 |

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

ANNUAL CASH FLOW WORKSHEET

| Item | Regional Average | | My Farm | Expected Change | 1999 Projection |
|---------------------------------------|------------------|--------------|----------------------|--------------------|--------------------|
| | Per Cow | Per Cwt. | Per Cow/ Per Cwt. | | |
| Average no. of cows | 121 | | | | |
| Total cwt. of milk sold | | 23,237 | | | |
| <u>Accrual Operating Receipts</u> | | | | | |
| Milk | \$ 2,971 | \$ 15.47 | \$ _____ | | \$ _____ |
| Dairy cattle | 131 | 0.68 | | | |
| Dairy calves | 20 | 0.11 | | | |
| Other livestock | 2 | 0.01 | | | |
| Crops | 71 | 0.37 | | | |
| Misc. Receipts | 86 | 0.45 | | | |
| Total | \$ 3,282 | \$ 17.09 | \$ _____ | | \$ _____ |
| <u>Accrual Operating Expenses</u> | | | | | |
| Hired labor | \$ 345 | \$ 1.80 | \$ _____ | | \$ _____ |
| Dairy grain & concentrate | 740 | 3.85 | | | |
| Dairy roughage | 40 | 0.21 | | | |
| Nondairy feed | 3 | 0.01 | | | |
| Mach. hire, rent & lease | 49 | 0.25 | | | |
| Mach. repair & vehicle exp. | 178 | 0.93 | | | |
| Fuel, oil & grease | 55 | 0.29 | | | |
| Replacement livestock | 20 | 0.10 | | | |
| Breeding | 35 | 0.18 | | | |
| Vet & medicine | 76 | 0.40 | | | |
| Milk marketing | 86 | 0.45 | | | |
| Bedding | 24 | 0.13 | | | |
| Milking supplies | 74 | 0.39 | | | |
| Cattle lease | 3 | 0.02 | | | |
| Custom boarding | 12 | 0.06 | | | |
| bST | 26 | 0.13 | | | |
| Other livestock exp. | 33 | 0.17 | | | |
| Fertilizer & lime | 64 | 0.33 | | | |
| Seeds & plants | 48 | 0.25 | | | |
| Spray & other crop exp. | 47 | 0.24 | | | |
| Land, bldg., fence repair | 55 | 0.29 | | | |
| Taxes | 64 | 0.33 | | | |
| Real estate rent & lease | 67 | 0.35 | | | |
| Insurance | 44 | 0.23 | | | |
| Utilities | 80 | 0.42 | | | |
| Miscellaneous | 43 | 0.22 | | | |
| Total Less Interest Paid | \$ 2,311 | \$ 12.03 | \$ _____ | | \$ _____ |
| <u>Net Accrual Operating Income</u> | | | | | |
| (without interest paid) | | <u>Total</u> | | | |
| | \$ 117,589 | | \$ _____ | | \$ _____ |
| - Change in livestock & crop invent.* | 8,631 | | | | |
| - Change in accounts receivable | 6,697 | | | | |
| - Change in feed & supply inventory** | 4,692 | | | | |
| + Change in accounts payable*** | <u>-3,889</u> | | | | |
| NET CASH FLOW | \$ 93,680 | | \$ _____ | | \$ _____ |
| - Net family withdrawals | \$ 30,352 | | | | |
| Available for Farm | \$ 63,328 | | \$ _____ | | |
| - Farm debt payments | <u>67,783</u> | | | | |
| Available for Farm Investment | \$ -4,455 | | \$ _____ | | \$ _____ |
| - Capital purchases | <u>52,018</u> | | | | |
| Additional Capital Needed | \$ 56,473 | | \$ _____ | | \$ _____ |

*Includes change in advance government receipts. **Includes change in prepaid expenses. ***Excludes change in interest account payable.

Cropping Analysis

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

LAND RESOURCES AND CROP PRODUCTION 60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | | | My Farm | | |
|----------------------|--------------|---------------|------------------|--------------|------------------|--------------|
| <u>Land</u> | <u>Owned</u> | <u>Rented</u> | <u>Total</u> | <u>Owned</u> | <u>Rented</u> | <u>Total</u> |
| Tillable | 217 | 138 | 355 | _____ | _____ | _____ |
| Nontillable | 42 | 13 | 55 | _____ | _____ | _____ |
| Other nontillable | 115 | 9 | 124 | _____ | _____ | _____ |
| Total | 374 | 160 | 534 | _____ | _____ | _____ |
| <u>Crop Yields</u> | <u>Farms</u> | <u>Acres*</u> | <u>Prod/Acre</u> | <u>Acres</u> | <u>Prod/Acre</u> | |
| Hay crop | 56 | 211 | 2.51 tn DM | _____ | _____ | tn DM |
| Corn silage | 48 | 108 | 17.12 tn | _____ | _____ | tn |
| | | | 5.35 tn DM | _____ | _____ | tn DM |
| Other forage | 6 | 25 | 2.04 tn DM | _____ | _____ | tn DM |
| Total forage | 56 | 307 | 3.36 tn DM | _____ | _____ | tn DM |
| Corn grain | 21 | 89 | 126 bu | _____ | _____ | bu |
| Oats | 5 | 43 | 52 bu | _____ | _____ | bu |
| Wheat | 2 | 44 | 53 bu | _____ | _____ | bu |
| Other crops | 5 | 38 | | _____ | _____ | |
| Tillable pasture | 24 | 46 | | _____ | _____ | |
| Idle | 11 | 59 | | _____ | _____ | |
| Total Tillable Acres | 60 | 355 | | _____ | _____ | |

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 197, corn silage 87, corn grain 31, oats 4, tillable pasture 18, and idle 11.

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 60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | My Farm |
|---|---------|---------|
| Total tillable acres per cow | 2.93 | _____ |
| Total forage acres per cow | 2.36 | _____ |
| Harvested forage dry matter, tons per cow | 7.94 | _____ |

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 25 farms in the region.

CROP RELATED ACCRUAL EXPENSES

Western and Central Plateau Region Dairy Farms Reporting, 1998

| Item | Total Per Till. Acre | All Corn Per Acre | Corn Silage Per Ton DM | Corn Grain Per Dry Sh. Bu. | Hay Crop | | Pasture | |
|-------------------------|-------------------------------|----------------------------|---------------------------------|-------------------------------------|-------------|---------------|----------------------|----------------------|
| | | | | | Per Acre | Per Ton DM | Per Till. Acre | Per Total Acre |
| No. of farms reporting | 60 | 12 | | | 11 | | 4 | |
| Ave. number of acres | 355 | 126 | | | 204 | | 8 | 69 |
| Fert. & lime | \$ 21.85 | \$ 27.27 | \$ 6.04 | \$ 0.20 | \$ 11.24 | \$ 4.64 | \$ 146.38 | \$ 16.97 |
| Seeds & plants | 16.19 | 28.90 | 6.40 | 0.21 | 11.62 | 4.80 | 0.63 | 0.07 |
| Spray & other crop exp. | 15.89 | 44.36 | 9.83 | 0.33 | 7.71 | 3.18 | 0.00 | 0.00 |
| TOTAL | \$ 53.93 | \$ 100.53 | \$ 22.27 | \$ 0.74 | \$ 30.57 | \$ 12.62 | \$ 147.01 | \$ 17.04 |

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

60 Western and Central Plateau Region Dairy Farms, 1998

| Machinery Expense | Average | | My Farm | |
|-----------------------------|----------------|----------------|----------------|----------------|
| | Total Expenses | Per Till. Acre | Total Expenses | Per Till. Acre |
| Fuel, oil & grease | \$ 6,697 | \$ 18.86 | \$ _____ | \$ _____ |
| Mach. repair & vehicle exp. | 21,566 | 60.75 | _____ | _____ |
| Machine hire, rent & lease | 5,870 | 16.54 | _____ | _____ |
| Interest (5%) | 7,875 | 22.18 | _____ | _____ |
| Depreciation | 20,415 | 57.51 | _____ | _____ |
| Total | \$ 62,423 | \$ 175.84 | \$ _____ | \$ _____ |

Dairy Analysis

Analysis of the dairy enterprise can reveal strengths and weaknesses of the dairy farm business. Information on this page should be used in conjunction with DHI and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 6 and 7.

DAIRY HERD INVENTORY
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Dairy Cows | | Heifer | | | | | |
|----------------------|------------|--------------|--------|------------------|------|------------|--------|------------|
| | No. | Value | Bred | | Open | | Calves | |
| | | | No. | Value | No. | Value | No. | Value |
| Beg. year (owned) | 120 | \$ 124,659 | 33 | \$ 28,653 | 37 | \$ 20,006 | 29 | \$ 7,539 |
| + Change w/o apprec. | | 2,970 | | 1,005 | | -1,423 | | 564 |
| + Appreciation | | <u>2,216</u> | | <u>575</u> | | <u>552</u> | | <u>111</u> |
| End year (owned) | 122 | \$ 129,845 | 35 | \$ 30,233 | 35 | \$ 19,135 | 31 | \$ 8,214 |
| End including leased | 123 | | | | | | | |
| Average number | 121 | | 99 | (all age groups) | | | | |

My Farm:

| | | | | | | | | |
|----------------------|-------|----------|-------|------------------|-------|----------|-------|----------|
| Beg. year (owned) | _____ | \$ _____ | _____ | \$ _____ | _____ | \$ _____ | _____ | \$ _____ |
| + Change w/o apprec. | | _____ | | _____ | | _____ | | _____ |
| + Appreciation | | _____ | | _____ | | _____ | | _____ |
| End 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
60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | My Farm |
|--|-----------|---------|
| Total milk sold, lbs. | 2,323,672 | _____ |
| Milk sold per cow, lbs. | 19,262 | _____ |
| Average milk plant test, percent butterfat | 3.69% | _____ |

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

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

60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | | | My Farm | | |
|---------------------------------------|------------|----------|----------|----------|----------|----------|
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| <u>Accrual Cost of Producing Milk</u> | | | | | | |
| Operating costs | \$ 264,787 | \$ 2,188 | \$ 11.40 | \$ _____ | \$ _____ | \$ _____ |
| Purchased inputs costs | \$ 296,874 | \$ 2,454 | \$ 12.78 | \$ _____ | \$ _____ | \$ _____ |
| Total Costs | \$ 362,120 | \$ 2,993 | \$ 15.58 | \$ _____ | \$ _____ | \$ _____ |
| <u>Accrual Receipts</u> | | | | | | |
| <u>From Milk</u> | \$ 359,549 | \$ 2,971 | \$ 15.47 | \$ _____ | \$ _____ | \$ _____ |
| Net Milk Receipts | \$ 349,086 | \$ 2,885 | \$ 15.02 | \$ _____ | \$ _____ | \$ _____ |
| Net Farm Income without Apprec. | \$ 62,675 | \$ 518 | \$ 2.70 | \$ _____ | \$ _____ | \$ _____ |
| Net Farm Income with Apprec. | \$ 82,225 | \$ 680 | \$ 3.54 | \$ _____ | \$ _____ | \$ _____ |

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

DAIRY RELATED ACCRUAL EXPENSES

60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Average | | My Farm | |
|--|---------|----------|----------|----------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Purchased dairy grain & concentrate | \$ 740 | \$ 3.85 | \$ _____ | \$ _____ |
| Purchased dairy roughage | 40 | 0.21 | _____ | _____ |
| Total Purchased Dairy Feed | \$ 780 | \$ 4.06 | \$ _____ | \$ _____ |
| Purchased grain & conc. as % of milk receipts | | 25% | | % |
| Purchased feed & crop exp. | \$ 938 | \$ 4.89 | \$ _____ | \$ _____ |
| Purchased feed & crop exp. as % of milk receipts | | 32% | | % |
| Breeding | \$ 35 | \$ 0.18 | \$ _____ | \$ _____ |
| Veterinary & medicine | 76 | 0.40 | _____ | _____ |
| Milk marketing | 86 | 0.45 | _____ | _____ |
| Bedding | 24 | 0.13 | _____ | _____ |
| Milking supplies | 74 | 0.39 | _____ | _____ |
| Cattle lease | 3 | 0.02 | _____ | _____ |
| Custom boarding | 12 | 0.06 | _____ | _____ |
| bST | 26 | 0.13 | _____ | _____ |
| Other livestock expense | 33 | 0.17 | _____ | _____ |

Capital and Labor Efficiency Analysis

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

CAPITAL EFFICIENCY

60 Western and Central Plateau Region Dairy Farms, 1998

| Item | Per Worker | Per Cow | Per Tillable Acre | Per Tillable Acre Owned |
|-----------------------|-------------------|------------------|----------------------|-------------------------|
| Farm capital | \$ 214,279 | \$ 6,517 | \$ 2,221 | \$ 3,634 |
| Real estate | | 2,752 | | 1,534 |
| Machinery & equipment | 42,801 | 1,302 | 444 | |
| Ratios | | | | |
| Asset turnover | Operating Expense | Interest Expense | Depreciation Expense | |
| 0.53 | 0.71 | 0.05 | 0.08 | |
| My Farm | | | | |
| Farm capital | \$ _____ | \$ _____ | \$ _____ | \$ _____ |
| Real estate | _____ | _____ | _____ | _____ |
| Machinery & equipment | _____ | _____ | _____ | _____ |
| Ratios | | | | |
| Asset turnover | Operating Expense | Interest Expense | Depreciation Expense | |
| _____ | _____ | _____ | _____ | |

LABOR FORCE INVENTORY AND ANALYSIS

60 Western and Central Plateau Region Dairy Farms, 1998

| Labor Force | Months | Age | Years of Educ. | Value of Labor & Mgmt. | | |
|--|------------|--|----------------|------------------------|----------|----------|
| Operator number 1 | 13.8 | 45 | 14 | \$ 27,050 | | |
| Operator number 2 | 3.7 | 46 | 13 | 7,363 | | |
| Operator number 3 | 0.6 | 33 | 15 | 1,381 | | |
| Family paid | 5.7 | | | | | |
| Family unpaid | 2.6 | | | | | |
| Hired | 17.8 | | | | | |
| Total | 44.2 | / 12 = 3.68 Worker Equivalent 1.39 Operator/Manager Equivalent | | | | |
| My Farm: Total | | | | | | |
| Operator's | _____ | / 12 = _____ Worker Equivalent / 12 = _____ Operator/Manager Equivalent | | | | |
| Labor Efficiency | | | | | | |
| | Average | | My Farm | | | |
| | Total | Per Worker | Total | Per Worker | | |
| Cows, average number | 121 | 33 | _____ | _____ | | |
| Milk sold, pounds | 2,323,672 | 631,433 | _____ | _____ | | |
| Tillable acres | 355 | 96 | _____ | _____ | | |
| Work units | 1,267 | 344 | _____ | _____ | | |
| Labor Costs | | | | | | |
| | Average | | My Farm | | | |
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| Value of operator(s) labor (\$1,600/mo.) | \$ 28,960 | \$ 239 | \$ 1.25 | \$ _____ | \$ _____ | \$ _____ |
| Family unpaid (\$1,600/mo.) | 4,160 | 34 | 0.18 | _____ | _____ | _____ |
| Hired | 41,770 | 345 | 1.80 | _____ | _____ | _____ |
| Total Labor | \$ 74,890 | \$ 619 | \$ 3.22 | \$ _____ | \$ _____ | \$ _____ |
| Machinery Cost | \$ 62,423 | \$ 516 | \$ 2.69 | \$ _____ | \$ _____ | \$ _____ |
| Total Labor & Mach. | \$ 137,313 | \$ 1,135 | \$ 5.91 | \$ _____ | \$ _____ | \$ _____ |

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 47 Western and Central Plateau Region Dairy Farms, 1997 & 1998

| Selected Factors | Average of 47 Farms* | | My Farm | | |
|--|----------------------|------------|----------|----------|----------|
| | 1997 | 1998 | 1997 | 1998 | Goal |
| <u>Size of Business</u> | | | | | |
| Average number of cows | 113 | 117 | _____ | _____ | _____ |
| Average number of heifers | 92 | 96 | _____ | _____ | _____ |
| Milk sold, lbs. | 2,135,413 | 2,252,737 | _____ | _____ | _____ |
| Worker equivalent | 3.55 | 3.57 | _____ | _____ | _____ |
| Total tillable acres | 331 | 334 | _____ | _____ | _____ |
| <u>Rates of Production</u> | | | | | |
| Milk sold per cow, lbs. | 18,876 | 19,279 | _____ | _____ | _____ |
| Hay DM per acre, tons | 2.5 | 2.6 | _____ | _____ | _____ |
| Corn silage per acre, tons | 16.3 | 16.4 | _____ | _____ | _____ |
| <u>Labor Efficiency</u> | | | | | |
| Cows per worker | 32 | 33 | _____ | _____ | _____ |
| Milk sold/worker, lbs. | 601,525 | 631,019 | _____ | _____ | _____ |
| <u>Cost Control</u> | | | | | |
| Grain & conc. purchased as % of milk sales | 32% | 26% | _____ % | _____ % | _____ % |
| Dairy feed & crop exp. per cwt. milk | \$ 5.10 | \$ 4.91 | \$ _____ | \$ _____ | \$ _____ |
| Labor & mach. costs/cow | \$ 1,095 | \$ 1,125 | \$ _____ | \$ _____ | \$ _____ |
| Operating cost of producing cwt. of milk | \$ 11.35 | \$ 11.44 | \$ _____ | \$ _____ | \$ _____ |
| <u>Capital Efficiency**</u> | | | | | |
| Farm capital per cow | \$ 6,469 | \$ 6,596 | \$ _____ | \$ _____ | \$ _____ |
| Mach. & equip. per cow | \$ 1,197 | \$ 1,239 | \$ _____ | \$ _____ | \$ _____ |
| Asset turnover ratio | 0.45 | 0.52 | _____ | _____ | _____ |
| <u>Profitability</u> | | | | | |
| Net farm income w/o apprec. | \$ 16,711 | \$ 60,090 | \$ _____ | \$ _____ | \$ _____ |
| Net farm income w/apprec. | \$ 28,707 | \$ 79,772 | \$ _____ | \$ _____ | \$ _____ |
| Labor & mgt. income per operator/manager | \$ -8,731 | \$ 21,724 | \$ _____ | \$ _____ | \$ _____ |
| Rate of return on equity capital w/appreciation | -2.3% | 8.1% | _____ % | _____ % | _____ % |
| Rate of return on all capital w/appreciation | 0.9% | 7.9% | _____ % | _____ % | _____ % |
| <u>Financial Summary</u> | | | | | |
| Farm net worth, end year | \$ 488,562 | \$ 539,942 | \$ _____ | \$ _____ | \$ _____ |
| Debt to asset ratio | 0.34 | 0.32 | _____ | _____ | _____ |
| Farm debt per cow | \$ 2,163 | \$ 2,158 | \$ _____ | \$ _____ | \$ _____ |

*Farms participating both years.

**Average for the year.

RECEIPTS AND EXPENSES PER COW AND PER CWT.
Same 47 Western and Central Plateau Region Dairy Farms, 1997 & 1998

| Item | 1997 | | 1998 | |
|--------------------------------------|----------|----------|----------|----------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Average Number of Cows | 113 | | 117 | |
| Cwt. Of Milk Sold | | 21,354 | | 22,527 |
| <u>ACCRUAL OPERATING RECEIPTS</u> | | | | |
| Milk | \$ 2,531 | \$ 13.40 | \$ 2,977 | \$ 15.46 |
| Dairy cattle | 186 | 0.98 | 132 | 0.68 |
| Dairy calves | 19 | 0.10 | 22 | 0.11 |
| Other livestock | 9 | 0.05 | 2 | 0.01 |
| Crops | 18 | 0.10 | 62 | 0.32 |
| Miscellaneous receipts | 69 | 0.37 | 81 | 0.42 |
| Total Receipts | 2,833 | 14.99 | 3,276 | 17.01 |
| <u>ACCRUAL OPERATING EXPENSES</u> | | | | |
| Hired labor | \$ 320 | \$ 1.70 | \$ 344 | \$ 1.79 |
| Dairy grain & concentrate | 804 | 4.25 | 764 | 3.97 |
| Dairy roughage | 25 | 0.13 | 34 | 0.18 |
| Nondairy feed | 1 | 0.01 | 4 | 0.02 |
| Machine hire/rent/lease | 58 | 0.31 | 48 | 0.25 |
| Mach. repair & vehicle exp. | 151 | 0.80 | 181 | 0.94 |
| Fuel, oil & grease | 61 | 0.32 | 55 | 0.28 |
| Replacement livestock | 31 | 0.16 | 16 | 0.08 |
| Breeding | 33 | 0.18 | 36 | 0.19 |
| Veterinary & medicine | 69 | 0.37 | 82 | 0.43 |
| Milk marketing | 77 | 0.41 | 82 | 0.43 |
| Bedding | 22 | 0.12 | 25 | 0.13 |
| Milking supplies | 58 | 0.31 | 69 | 0.36 |
| Cattle lease | 1 | 0.00 | 2 | 0.01 |
| Custom boarding | 15 | 0.08 | 14 | 0.07 |
| bST expense | 27 | 0.14 | 28 | 0.14 |
| Other livestock expense | 41 | 0.21 | 36 | 0.19 |
| Fertilizer & lime | 49 | 0.26 | 55 | 0.29 |
| Seeds & plants | 42 | 0.22 | 49 | 0.25 |
| Spray/other crop expense | 45 | 0.24 | 44 | 0.23 |
| Land, building, fence repair | 30 | 0.16 | 52 | 0.27 |
| Taxes | 65 | 0.34 | 63 | 0.33 |
| Real estate rent/lease | 56 | 0.30 | 70 | 0.37 |
| Insurance | 41 | 0.22 | 46 | 0.24 |
| Utilities | 79 | 0.42 | 77 | 0.40 |
| Interest paid | 159 | 0.84 | 164 | 0.85 |
| Miscellaneous | 41 | 0.22 | 38 | 0.20 |
| Total Operating Expenses | \$ 2,401 | \$ 12.70 | \$ 2,477 | \$ 12.86 |
| Expansion Livestock | 47 | 0.25 | 24 | 0.12 |
| Machinery Depreciation | 147 | 0.78 | 160 | 0.83 |
| Real Estate Depreciation | 91 | 0.48 | 101 | 0.53 |
| Total Expenses | \$ 2,685 | \$ 14.21 | \$ 2,762 | \$ 14.35 |
| Net Farm Income Without Appreciation | \$ 148 | \$ 0.78 | \$ 514 | \$ 2.67 |

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

60 Western and Central Plateau Region Dairy Farms, 1998

| Size of Business | | | Rate of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| (11)* | (11) | (11) | (10) | (9) | (9) | (11) | (11) |
| 7.37 | 285 | 5,863,460 | 22,330 | 4.25 | 22 | 49 | 960,527 |
| 4.23 | 136 | 2,534,509 | 20,471 | 2.85 | 19 | 36 | 728,129 |
| 3.11 | 83 | 1,618,186 | 18,432 | 2.53 | 17 | 31 | 587,050 |
| 2.15 | 58 | 1,039,393 | 16,391 | 2.09 | 13 | 25 | 420,971 |
| 1.57 | 41 | 562,815 | 13,220 | 1.43 | 9 | 17 | 254,134 |

| 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) | |
| \$443 | 16% | \$267 | \$849 | \$582 | \$3.63 | |
| 576 | 21 | 389 | 1,019 | 807 | 4.47 | |
| 683 | 25 | 483 | 1,175 | 914 | 5.00 | |
| 833 | 29 | 586 | 1,343 | 1,026 | 5.53 | |
| 968 | 34 | 736 | 1,563 | 1,196 | 6.54 | |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--------------------------|--------------------------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income w/Apprec. | Net Farm Inc. w/o Apprec. | Labor & Mgt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
| (10) | (10) | (10) | (3) | (3) | (3) | (6) |
| \$3,482 | \$8.63 | \$13.41 | \$197,841 | \$170,405 | \$103,547 | \$130,455 |
| 3,152 | 10.27 | 14.73 | 108,581 | 78,602 | 36,298 | 61,327 |
| 2,884 | 11.30 | 15.70 | 54,629 | 42,024 | 20,422 | 32,188 |
| 2,525 | 11.85 | 17.20 | 35,949 | 27,237 | 7,768 | 15,333 |
| 2,042 | 14.18 | 21.84 | 14,126 | -4,895 | -27,645 | -4,520 |

*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 253 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

253 New York Dairy Farms, 1997

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| (11)* | (11) | (11) | (10) | (9) | (9) | (11) | (11) |
| 16.3 | 749 | 16,977,721 | 24,322 | 4.1 | 22 | 57 | 1,169,242 |
| 8.0 | 318 | 6,801,234 | 22,395 | 3.4 | 19 | 46 | 929,873 |
| 5.8 | 214 | 4,351,063 | 21,446 | 3.0 | 18 | 41 | 819,044 |
| 4.5 | 155 | 3,051,237 | 20,524 | 2.6 | 17 | 37 | 731,958 |
| 3.9 | 128 | 2,361,619 | 19,512 | 2.4 | 16 | 34 | 659,774 |
| ----- | | | | | | | |
| 3.4 | 106 | 1,896,078 | 18,496 | 2.2 | 15 | 32 | 597,572 |
| 2.9 | 85 | 1,512,359 | 17,718 | 2.0 | 14 | 30 | 532,282 |
| 2.4 | 69 | 1,177,556 | 16,584 | 1.8 | 13 | 28 | 486,658 |
| 1.9 | 55 | 940,983 | 15,088 | 1.5 | 11 | 24 | 413,316 |
| 1.4 | 40 | 601,704 | 12,762 | 1.0 | 8 | 19 | 288,154 |

| 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) |
| \$435 | 20% | \$226 | \$675 | \$576 | \$3.68 |
| 600 | 26 | 296 | 813 | 774 | 4.51 |
| 673 | 28 | 336 | 903 | 874 | 4.82 |
| 745 | 29 | 393 | 975 | 943 | 5.10 |
| 820 | 32 | 429 | 1,021 | 1,016 | 5.37 |
| ----- | | | | | |
| 883 | 33 | 465 | 1,079 | 1,092 | 5.61 |
| 939 | 35 | 503 | 1,172 | 1,146 | 5.85 |
| 987 | 37 | 550 | 1,254 | 1,202 | 6.09 |
| 1,059 | 39 | 613 | 1,350 | 1,279 | 6.47 |
| 1,183 | 45 | 741 | 1,553 | 1,411 | 7.41 |

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

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS**
253 New York Dairy Farms, 1997

| Milk Receipts Per Cow | Milk Receipts Per Cwt. | Oper. Cost Milk Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cow | Total Cost Production Per Cwt. |
|-----------------------|------------------------|-------------------------|--------------------------|-------------------------------|--------------------------------|
| (10) | (10) | (10) | (10) | (10) | (10) |
| \$3,381 | \$15.09 | \$1,319 | \$8.30 | \$2,127 | \$12.68 |
| 3,052 | 14.56 | 1,690 | 10.02 | 2,552 | 13.72 |
| 2,941 | 14.20 | 1,870 | 10.58 | 2,726 | 14.27 |
| 2,836 | 13.86 | 2,079 | 11.05 | 2,847 | 14.84 |
| 2,719 | 13.66 | 2,158 | 11.46 | 2,947 | 15.45 |
| ----- | | | | | |
| 2,553 | 13.53 | 2,279 | 11.81 | 3,056 | 16.12 |
| 2,428 | 13.41 | 2,403 | 12.24 | 3,151 | 16.61 |
| 2,271 | 13.25 | 2,525 | 12.81 | 3,285 | 17.46 |
| 2,030 | 13.01 | 2,682 | 13.59 | 3,486 | 18.63 |
| 1,686 | 12.54 | 3,039 | 15.55 | 3,820 | 22.37 |

| Profitability | | | | | | |
|--------------------------------------|---------|--------------------------------|-----------------------------------|---------|---------------------------|--------------|
| Net Farm Income Without Appreciation | | | Net Farm Income With Appreciation | | Labor & Management Income | |
| Total | Per Cow | As % of Total Accrual Receipts | Total | Per Cow | Per Farm | Per Operator |
| (3) | (10) | (3) | (3) | (10) | (3) | (3) |
| \$258,543 | \$806 | 25.1% | \$270,808 | \$847 | \$160,233 | \$98,682 |
| 77,869 | 516 | 17.3 | 100,963 | 573 | 37,347 | 28,721 |
| 46,999 | 392 | 13.3 | 63,703 | 461 | 15,083 | 11,972 |
| 34,998 | 326 | 11.1 | 45,449 | 396 | 5,143 | 3,819 |
| 27,155 | 261 | 8.6 | 34,877 | 320 | -1,948 | -1,611 |
| ----- | | | | | | |
| 19,291 | 165 | 5.8 | 24,515 | 239 | -10,582 | -7,542 |
| 8,889 | 86 | 3.0 | 14,345 | 147 | -20,185 | -14,855 |
| -2,819 | -28 | -1.1 | 4,254 | 40 | -31,873 | -25,017 |
| -19,342 | -181 | -6.9 | -11,524 | -118 | -52,868 | -39,548 |
| -74,027 | -473 | -22.2 | -67,379 | -442 | -114,768 | -93,571 |

Farm Business Charts for farms with freestall barns and 150 cows or less, 151-300 cows, and more than 300 cows; and farms with conventional barns with 60 cows or less and more than 60 cows are shown on pages 29-33.

Financial Analysis Chart

The farm financial analysis chart on page 26 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
253 New York Dairy Farms, 1997

| 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) | |
| \$66 | \$720 | 2.32 | 3% | \$218 | |
| 209 | 565 | 1.40 | 8 | 910 | |
| 297 | 500 | 1.18 | 11 | 1,452 | |
| 363 | 442 | 1.01 | 13 | 1,913 | |
| 410 | 379 | 0.89 | 16 | 2,291 | |
| 445 | 318 | 0.76 | 18 | 2,675 | |
| 496 | 258 | 0.62 | 19 | 3,031 | |
| 565 | 197 | 0.44 | 22 | 3,349 | |
| 620 | 87 | 0.17 | 25 | 3,818 | |
| 770 | -210 | -0.60 | 38 | 4,870 | |
| 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 | 97% | 0.04 | 0.00 | 15% | 10% |
| 0.10 | 89 | 0.13 | 0.00 | 7 | 7 |
| 0.23 | 79 | 0.21 | 0.08 | 4 | 5 |
| 0.37 | 72 | 0.29 | 0.21 | 1 | 4 |
| 0.51 | 65 | 0.36 | 0.31 | -1 | 2 |
| 0.71 | 57 | 0.41 | 0.41 | -3 | 1 |
| 0.90 | 52 | 0.47 | 0.49 | -5 | -1 |
| 1.12 | 46 | 0.56 | 0.59 | -8 | -3 |
| 1.55 | 38 | 0.68 | 0.71 | -14 | -5 |
| 7.09 | 16 | 1.01 | 1.14 | -58 | -11 |
| 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) | (6) | |
| .75 | \$1,142 | \$513 | \$3,881 | \$144,340 | |
| .62 | 1,845 | 749 | 4,914 | 49,494 | |
| .55 | 2,138 | 900 | 5,538 | 31,463 | |
| .52 | 2,395 | 1,041 | 6,043 | 19,820 | |
| .48 | 2,708 | 1,169 | 6,505 | 10,964 | |
| .44 | 3,158 | 1,319 | 6,937 | 2,421 | |
| .40 | 3,544 | 1,484 | 7,378 | -6,589 | |
| .35 | 3,888 | 1,704 | 7,957 | -22,343 | |
| .30 | 4,476 | 2,033 | 9,059 | -48,040 | |
| .22 | 7,015 | 2,778 | 11,938 | -157,818 | |

*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 28 includes the average values for the resulting five groups of dairy farms. The average size of farms in the five groups ranges from 46 cows on the small conventional farms to 587 cows on the largest freestall farms.

The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow, and the greatest returns to labor, management and capital. The large conventional farms showed average profits somewhat higher than the small freestall farm businesses.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 29-33. 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 42-51 of the 1997 State Summary*. As herd size increases, the average profitability generally increases (page 42)*. Net farm income without appreciation averaged \$ -603 per farm for the less than 40 cow farms and \$131,897 per farm for those with 300 cows and over. This relationship generally holds for all measures of profitability including rate of return on capital.

Farm net worth increases rapidly as herd size increases (pages 46-49)*, even though percent equity was higher on the smaller farms. The group with 85 to 99 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 50-51)*. The farms with 300 and more cows per farm averaged 57 percent more milk sold per cow than the smallest farms. All of the groups with 85 or more cows averaged above 18,000 pounds of milk sold per cow while the farms smaller than 85 cows averaged 16,650 pounds of milk sold per cow. 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 288,076 pounds at the lowest herd size category up to 1,011,165 pounds at the largest size category.

*Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Management Business Summary, New York, 1997, Department of Agricultural, Resource, and Managerial Economics, Cornell University, R.B. 98-06, August 1998.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE

222 New York Dairy Farms, 1997

| Item | Farms with: | Conventional | | Freestall | | |
|---|-------------|--------------|-----------|------------|--------------|------------|
| | | <= 60 Cows | >60 Cows | <=150 Cows | 151-300 Cows | ≥300 Cows |
| Number of farms | | 42 | 39 | 60 | 41 | 40 |
| <u>Cropping Program Analysis</u> | | | | | | |
| Total Tillable acres | | 153 | 247 | 332 | 597 | 1,108 |
| Tillable acres rented* | | 58 | 101 | 143 | 311 | 500 |
| Hay crop acres* | | 100 | 156 | 174 | 269 | 437 |
| Corn silage acres* | | 26 | 52 | 92 | 185 | 495 |
| Hay crop, tons DM/acre | | 1.9 | 2.1 | 2.1 | 2.5 | 3.0 |
| Corn silage, tons/acre | | 12.2 | 14.3 | 14.6 | 14.9 | 17.2 |
| Oats, bushels/acre | | 71 | 65 | 58 | 55 | 40 |
| Forage DM per cow, tons | | 6.6 | 7.2 | 7.4 | 7.3 | 6.8 |
| Tillable acres/cow | | 3.3 | 3.1 | 3.1 | 2.8 | 1.9 |
| Fert. & lime exp./tillable acre | | \$17.31 | \$23.18 | \$27.38 | \$27.65 | \$31.89 |
| Total machinery costs | | \$21,065 | \$35,299 | \$50,301 | \$101,405 | \$229,353 |
| Machinery cost/tillable acre | | \$138 | \$143 | \$152 | \$170 | \$207 |
| <u>Dairy Analysis</u> | | | | | | |
| Number of cows | | 46 | 80 | 107 | 216 | 587 |
| Number of heifers | | 36 | 63 | 77 | 156 | 422 |
| Milk sold, lbs. | | 757,555 | 1,394,133 | 1,997,423 | 4,337,572 | 13,169,719 |
| Milk sold/cow, lbs. | | 16,392 | 17,327 | 18,714 | 20,118 | 22,421 |
| Operating cost of prod. milk/cwt. | | \$10.80 | \$12.07 | \$11.82 | \$12.23 | \$11.65 |
| Total cost of prod. milk/cwt. | | \$17.82 | \$16.81 | \$16.12 | \$15.21 | \$13.68 |
| Price/cwt. milk sold | | \$13.61 | \$13.73 | \$13.77 | \$13.93 | \$13.49 |
| Purchased dairy feed/cow | | \$765 | \$808 | \$850 | \$926 | \$1,041 |
| Purchased dairy feed/cwt. milk | | \$4.65 | \$4.64 | \$4.55 | \$4.61 | \$4.64 |
| Purchased grain & conc. as % milk rec. | | 31% | 32% | 32% | 32% | 34% |
| Purchased feed & crop exp./cwt. milk | | \$5.43 | \$5.46 | \$5.57 | \$5.51 | \$5.29 |
| <u>Capital Efficiency</u> | | | | | | |
| Farm capital/worker | | \$207,363 | \$199,094 | \$226,750 | \$246,641 | \$249,800 |
| Farm capital/cow | | \$8,745 | \$6,968 | \$6,972 | \$6,280 | \$5,528 |
| Farm capital/tillable acre owned | | \$4,235 | \$3,818 | \$3,947 | \$4,760 | \$5,337 |
| Real estate/cow | | \$4,597 | \$3,355 | \$3,169 | \$2,603 | \$2,236 |
| Machinery investment/cow | | \$1,762 | \$1,310 | \$1,423 | \$1,145 | \$875 |
| Asset turnover ratio | | 0.30 | 0.38 | 0.43 | 0.51 | 0.62 |
| <u>Labor Efficiency</u> | | | | | | |
| Worker equivalent | | 1.94 | 2.80 | 3.29 | 5.50 | 12.99 |
| Operator/manager equivalent | | 1.25 | 1.31 | 1.41 | 1.73 | 2.08 |
| Milk sold/worker, lbs. | | 390,492 | 497,905 | 607,119 | 788,649 | 1,013,835 |
| Cows/worker | | 24 | 29 | 33 | 39 | 45 |
| Labor cost/cow | | \$757 | \$640 | \$577 | \$562 | \$597 |
| Labor cost/tillable acre | | \$228 | \$207 | \$186 | \$203 | \$316 |
| <u>Profitability & Balance Sheet Analysis</u> | | | | | | |
| Net farm income (without appreciation) | | \$12,153 | \$9,146 | \$16,448 | \$27,901 | \$135,137 |
| Labor & management income/operator | | \$-6,954 | \$-12,276 | \$-9,715 | \$-7,221 | \$23,612 |
| Rate Return on all capital with appreciation | | -1.8% | -1.4% | 0.4% | 2.7% | 6.1% |
| Farm debt/cow | | \$2,153 | \$1,980 | \$2,448 | \$2,779 | \$2,737 |
| Percent equity | | 74% | 71% | 63% | 55% | 50% |

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

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS

42 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1997

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| (11)* | (11) | (11) | (10) | (9) | (9) | (11) | (11) |
| 3.21 | 59 | 1,101,928 | 20,866 | 3.4 | 19 | 39 | 693,273 |
| 2.44 | 55 | 1,003,781 | 19,995 | 2.5 | 18 | 32 | 565,561 |
| 2.17 | 53 | 914,960 | 18,631 | 2.2 | 17 | 30 | 495,451 |
| 2.01 | 51 | 879,648 | 18,136 | 2.1 | 16 | 28 | 468,090 |
| 1.96 | 48 | 803,954 | 17,338 | 2.0 | 15 | 26 | 434,043 |
| ----- | | | | | | | |
| 1.82 | 46 | 731,007 | 15,900 | 1.8 | 14 | 24 | 400,376 |
| 1.68 | 42 | 680,016 | 15,083 | 1.6 | 12 | 23 | 346,975 |
| 1.58 | 41 | 624,372 | 14,511 | 1.4 | 10 | 22 | 311,828 |
| 1.50 | 39 | 555,439 | 13,519 | 1.2 | 8 | 20 | 286,172 |
| 1.33 | 34 | 416,286 | 10,729 | 0.8 | 5 | 15 | 202,070 |

| 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) | |
| \$361 | 19% | \$197 | \$744 | \$462 | \$3.64 | |
| 519 | 24 | 297 | 1,000 | 639 | 4.34 | |
| 575 | 27 | 360 | 1,080 | 746 | 4.68 | |
| 637 | 28 | 411 | 1,131 | 807 | 4.88 | |
| 658 | 31 | 449 | 1,175 | 853 | 5.27 | |
| ----- | | | | | | |
| 725 | 33 | 470 | 1,246 | 944 | 5.68 | |
| 798 | 35 | 493 | 1,311 | 998 | 5.95 | |
| 847 | 38 | 570 | 1,382 | 1,069 | 6.23 | |
| 905 | 41 | 639 | 1,515 | 1,148 | 6.59 | |
| 1,084 | 46 | 789 | 1,840 | 1,349 | 7.67 | |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--------------------------|--------------------------------|--------------------------------------|--------------|------------------------------|-------------------------------|
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
| (10) | (10) | (10) | Total (3) | Per Cow (10) | (3) | (6) |
| \$3,082 | \$7.59 | \$13.87 | \$42,028 | \$872 | \$21,550 | \$38,588 |
| 2,831 | 9.03 | 15.37 | 31,895 | 732 | 11,197 | 21,215 |
| 2,552 | 9.85 | 16.36 | 28,320 | 603 | 5,762 | 15,630 |
| 2,454 | 10.36 | 16.62 | 23,690 | 436 | 718 | 12,112 |
| 2,377 | 10.54 | 17.44 | 14,588 | 349 | -1,899 | 9,298 |
| ----- | | | | | | |
| 2,102 | 11.16 | 17.81 | 10,027 | 215 | -4,866 | 3,903 |
| 1,978 | 11.63 | 18.76 | 5,331 | 112 | -11,366 | 696 |
| 1,904 | 12.40 | 20.20 | -504 | -11 | -22,365 | -5,288 |
| 1,780 | 12.96 | 22.27 | -5,675 | -130 | -28,673 | -11,140 |
| 1,403 | 14.95 | 27.10 | -16,537 | -446 | -43,483 | -22,635 |

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

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS

39 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1997

| 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) |
| 4.05 | 126 | 2,056,671 | 22,995 | 4.1 | 21 | 48 | 884,871 |
| 3.78 | 103 | 1,865,087 | 20,647 | 3.1 | 19 | 38 | 677,191 |
| 3.46 | 91 | 1,675,072 | 18,877 | 2.8 | 18 | 35 | 636,310 |
| 3.21 | 82 | 1,581,941 | 18,329 | 2.4 | 17 | 33 | 559,715 |
| 2.98 | 77 | 1,383,678 | 17,873 | 2.3 | 16 | 31 | 517,084 |
| ----- | | | | | | | |
| 2.63 | 74 | 1,248,877 | 17,266 | 2.1 | 15 | 29 | 497,963 |
| 2.50 | 70 | 1,182,772 | 16,701 | 1.9 | 14 | 28 | 479,995 |
| 2.32 | 67 | 1,152,870 | 15,718 | 1.7 | 12 | 26 | 441,783 |
| 1.93 | 64 | 1,063,871 | 14,601 | 1.2 | 12 | 22 | 354,372 |
| 1.47 | 62 | 896,128 | 12,637 | 0.8 | 9 | 19 | 300,834 |

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) |
| \$448 | 21% | \$184 | \$664 | \$608 | \$3.75 |
| 563 | 25 | 246 | 816 | 699 | 4.10 |
| 633 | 28 | 299 | 936 | 774 | 4.67 |
| 680 | 29 | 394 | 978 | 834 | 4.88 |
| 723 | 31 | 431 | 1,033 | 900 | 5.09 |
| ----- | | | | | |
| 800 | 33 | 460 | 1,123 | 938 | 5.46 |
| 868 | 35 | 509 | 1,207 | 1,072 | 5.97 |
| 951 | 38 | 564 | 1,311 | 1,131 | 6.44 |
| 1,011 | 42 | 655 | 1,357 | 1,202 | 6.84 |
| 1,086 | 47 | 748 | 1,541 | 1,360 | 7.95 |

Value and Cost of Production

Profitability

| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
|-----------------------|--------------------------|--------------------------------|--------------------------------------|--------------|------------------------------|-------------------------------|
| (10) | (10) | (10) | Total (3) | Per Cow (10) | (3) | (6) |
| \$3,044 | \$8.78 | \$13.65 | \$42,169 | \$555 | \$15,671 | \$56,186 |
| 2,854 | 10.51 | 14.98 | 36,176 | 416 | 9,029 | 25,240 |
| 2,652 | 11.24 | 15.59 | 28,970 | 354 | 3,396 | 17,846 |
| 2,517 | 11.73 | 15.96 | 24,309 | 323 | 628 | 8,612 |
| 2,432 | 11.92 | 16.27 | 17,957 | 244 | -7,852 | 2,860 |
| ----- | | | | | | |
| 2,377 | 12.21 | 16.70 | 11,509 | 142 | -11,099 | -3,089 |
| 2,270 | 12.79 | 17.47 | -159 | -0.8 | -17,743 | -10,909 |
| 2,183 | 13.57 | 18.33 | -10,805 | -136 | -25,059 | -22,645 |
| 2,046 | 14.17 | 19.55 | -17,203 | -224 | -30,421 | -36,438 |
| 1,690 | 15.53 | 23.35 | -33,218 | -423 | -55,370 | -69,723 |

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

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
60 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 1997

| 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) |
| 5.28 | 145 | 3,195,348 | 24,936 | 3.8 | 21 | 58 | 993,037 |
| 4.44 | 139 | 2,748,342 | 21,844 | 3.0 | 19 | 42 | 782,022 |
| 4.08 | 134 | 2,549,753 | 20,493 | 2.7 | 18 | 38 | 721,468 |
| 3.67 | 122 | 2,283,113 | 19,390 | 2.5 | 16 | 34 | 672,546 |
| 3.46 | 114 | 2,103,312 | 18,563 | 2.2 | 15 | 33 | 638,941 |
| ----- | | | | | | | |
| 3.13 | 107 | 1,942,241 | 17,900 | 2.0 | 14 | 32 | 596,502 |
| 2.84 | 96 | 1,657,370 | 17,259 | 1.8 | 14 | 31 | 550,538 |
| 2.58 | 85 | 1,425,509 | 16,213 | 1.7 | 13 | 29 | 513,301 |
| 2.03 | 73 | 1,182,037 | 15,070 | 1.4 | 11 | 27 | 458,883 |
| 1.38 | 54 | 887,209 | 13,256 | 1.0 | 8 | 22 | 357,100 |
| ----- | | | | | | | |
| 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) | | |
| \$530 | 23% | \$263 | \$659 | \$630 | \$4.09 | | |
| 615 | 26 | 307 | 819 | 834 | 4.74 | | |
| 652 | 27 | 335 | 878 | 879 | 5.05 | | |
| 703 | 29 | 395 | 965 | 916 | 5.20 | | |
| 759 | 31 | 442 | 1,021 | 1,015 | 5.35 | | |
| ----- | | | | | | | |
| 827 | 32 | 494 | 1,062 | 1,060 | 5.54 | | |
| 883 | 34 | 535 | 1,160 | 1,129 | 5.87 | | |
| 948 | 36 | 575 | 1,213 | 1,176 | 6.16 | | |
| 992 | 39 | 640 | 1,303 | 1,244 | 6.52 | | |
| 1,131 | 42 | 756 | 1,458 | 1,377 | 7.23 | | |
| ----- | | | | | | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| (10) | (10) | (10) | Total | Per Cow | (3) | (6) | |
| \$3,439 | \$8.88 | \$12.77 | \$80,921 | \$746 | \$42,272 | \$66,765 | |
| 3,026 | 10.20 | 13.87 | 54,208 | 486 | 25,117 | 42,074 | |
| 2,831 | 10.49 | 14.54 | 42,104 | 382 | 9,790 | 34,040 | |
| 2,646 | 10.73 | 15.20 | 32,497 | 332 | -73 | 23,877 | |
| 2,558 | 11.07 | 15.91 | 25,051 | 267 | -4,267 | 15,215 | |
| ----- | | | | | | | |
| 2,506 | 11.41 | 16.45 | 16,655 | 176 | -9,885 | 4,624 | |
| 2,347 | 11.84 | 16.99 | 7,778 | 90 | -17,559 | -5,834 | |
| 2,197 | 12.84 | 17.83 | -3,503 | -33 | -26,980 | -25,878 | |
| 2,023 | 14.03 | 18.94 | -22,366 | -260 | -50,159 | -59,207 | |
| 1,798 | 16.51 | 21.41 | -68,863 | -590 | -87,562 | -107,335 | |

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

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
41 Freestall Barn Dairy Farms with 151-300 Cows, New York, 1997

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|-------------------|-------------|------------------|--------------------------|-----------------------|---------------------------|------------------|-----------------------------|
| Worker Equivalent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| (11)* | (11) | (11) | (10) | (9) | (9) | (11) | (11) |
| 8.87 | 287 | 6,731,911 | 24,776 | 3.8 | 23 | 63 | 1,224,427 |
| 6.95 | 272 | 5,348,971 | 22,961 | 3.4 | 20 | 50 | 980,478 |
| 6.47 | 254 | 5,094,989 | 22,007 | 3.3 | 18 | 48 | 910,554 |
| 5.75 | 235 | 4,872,494 | 21,306 | 3.1 | 17 | 45 | 872,906 |
| 5.51 | 220 | 4,497,454 | 20,775 | 2.9 | 16 | 42 | 811,162 |
| ----- | | | | | | | |
| 5.36 | 203 | 4,025,898 | 20,268 | 2.5 | 15 | 39 | 776,088 |
| 5.00 | 190 | 3,690,005 | 19,634 | 2.4 | 13 | 36 | 739,869 |
| 4.38 | 182 | 3,483,656 | 18,313 | 2.2 | 12 | 34 | 701,973 |
| 4.05 | 171 | 3,278,840 | 17,079 | 2.0 | 10 | 31 | 635,417 |
| 3.21 | 158 | 2,748,721 | 14,619 | 1.0 | 9 | 29 | 553,188 |

| 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) |
| \$512 | 20% | \$262 | \$656 | \$747 | \$4.06 |
| 674 | 26 | 327 | 779 | 920 | 4.70 |
| 770 | 28 | 399 | 873 | 955 | 4.94 |
| 862 | 30 | 436 | 946 | 1,003 | 5.14 |
| 901 | 32 | 463 | 983 | 1,080 | 5.45 |
| ----- | | | | | |
| 925 | 33 | 491 | 1,024 | 1,122 | 5.61 |
| 970 | 34 | 531 | 1,156 | 1,186 | 5.91 |
| 1,002 | 36 | 562 | 1,269 | 1,265 | 6.11 |
| 1,055 | 39 | 635 | 1,346 | 1,369 | 6.38 |
| 1,261 | 46 | 710 | 1,418 | 1,525 | 7.77 |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--------------------------|--------------------------------|---------------------------------|---------|------------------------------|-------------------------------|
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Apprec. | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
| (10) | (10) | (10) | Total | Per Cow | (3) | (6) |
| \$3,568 | \$9.13 | \$13.07 | \$167,103 | \$838 | \$60,411 | \$118,357 |
| 3,298 | 10.55 | 13.65 | 100,768 | 548 | 40,779 | 70,965 |
| 3,057 | 11.15 | 13.96 | 76,563 | 336 | 25,167 | 52,519 |
| 2,932 | 11.44 | 14.21 | 56,942 | 256 | 9,952 | 29,714 |
| 2,904 | 12.20 | 14.83 | 35,560 | 160 | -1,910 | 7,348 |
| ----- | | | | | | |
| 2,809 | 12.66 | 15.37 | 16,759 | 68 | -7,808 | -16,957 |
| 2,721 | 13.00 | 15.81 | -934 | -4 | -18,240 | -34,456 |
| 2,471 | 13.54 | 16.41 | -20,243 | -90 | -31,069 | -49,012 |
| 2,370 | 14.12 | 17.60 | -41,389 | -214 | -47,750 | -67,973 |
| 2,004 | 16.10 | 19.65 | -84,122 | -439 | -112,680 | -168,740 |

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS

40 Freestall Barn Dairy Farms with 300 or More Cows, New York, 1997

| 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) |
| 30.16 | 1,612 | 36,966,226 | 25,557 | 4.7 | 21 | 60 | 1,365,046 |
| 18.07 | 853 | 20,303,842 | 23,339 | 3.8 | 20 | 53 | 1,220,599 |
| 15.91 | 631 | 14,342,577 | 23,090 | 3.5 | 19 | 50 | 1,127,199 |
| 13.08 | 555 | 12,345,606 | 22,744 | 3.2 | 18 | 46 | 1,016,973 |
| 11.73 | 493 | 10,427,122 | 22,491 | 2.9 | 18 | 44 | 986,127 |
| 10.03 | 394 | 9,006,380 | 22,162 | 2.6 | 17 | 43 | 922,153 |
| 8.90 | 365 | 8,011,622 | 21,646 | 2.5 | 15 | 41 | 866,314 |
| 8.16 | 341 | 7,378,266 | 20,921 | 2.3 | 15 | 38 | 845,784 |
| 7.54 | 321 | 6,683,887 | 20,230 | 2.1 | 14 | 37 | 781,372 |
| 6.32 | 310 | 6,231,661 | 18,428 | 1.4 | 13 | 33 | 687,109 |
| 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) | | |
| \$783 | 27% | \$254 | \$726 | \$948 | \$4.37 | | |
| 846 | 28 | 289 | 779 | 1,055 | 4.61 | | |
| 923 | 30 | 309 | 831 | 1,102 | 4.95 | | |
| 976 | 32 | 357 | 885 | 1,156 | 5.27 | | |
| 991 | 34 | 374 | 968 | 1,206 | 5.45 | | |
| 1,034 | 35 | 397 | 1,017 | 1,230 | 5.56 | | |
| 1,089 | 37 | 422 | 1,036 | 1,241 | 5.70 | | |
| 1,117 | 38 | 467 | 1,068 | 1,283 | 5.79 | | |
| 1,139 | 39 | 492 | 1,164 | 1,301 | 5.93 | | |
| 1,210 | 41 | 595 | 1,323 | 1,370 | 6.56 | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Appreciation | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| (10) | (10) | (10) | Total | Per Cow | (3) | (6) | |
| \$3,466 | \$9.84 | \$11.88 | 595,440 | \$724 | \$275,911 | \$325,657 | |
| 3,219 | 10.85 | 12.93 | 333,662 | 436 | 107,574 | 153,526 | |
| 3,113 | 11.16 | 13.23 | 217,681 | 381 | 65,647 | 95,093 | |
| 3,034 | 11.52 | 13.51 | 142,588 | 317 | 44,564 | 59,203 | |
| 3,010 | 11.73 | 13.82 | 120,804 | 244 | 24,904 | 36,690 | |
| 2,983 | 11.82 | 14.06 | 71,533 | 160 | 5,076 | 4,542 | |
| 2,904 | 12.06 | 14.24 | 40,577 | 103 | -9,912 | -25,129 | |
| 2,815 | 12.38 | 14.66 | 10,600 | 23 | -30,893 | -60,317 | |
| 2,746 | 12.92 | 15.29 | -38,458 | -81 | -55,740 | -154,390 | |
| 2,555 | 14.28 | 17.30 | -143,065 | -355 | -142,233 | -341,572 | |

*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 desired 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. Goals should be Timed with a designated date by which the goal will be achieved.

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

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

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

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

Worksheet for Setting Goals

I. Mission and Objectives

Worksheet for Setting Goals (Continued)

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

Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 23-26 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths: _____

Needs improvement: _____

GLOSSARY AND LOCATION OF COMMON TERMS

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

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

Accrual Expenses - (defined on page 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.

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

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

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

Cash Flow Coverage Ratio - (defined on page 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)

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

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

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

Debt Coverage Ratio – (defined on page 14)

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)

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

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

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

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

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

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

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 Milk Receipts – Accrual milk receipts less milk marketing expense.

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

Operating Costs of Producing Milk - (defined on page 19)

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

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

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

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

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

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

Purchased Inputs Cost of Producing Milk - (defined on page 19)

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

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

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

Return on Equity Capital - (defined on page 7)

Return on Total Capital - (defined on page 7)

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.

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

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