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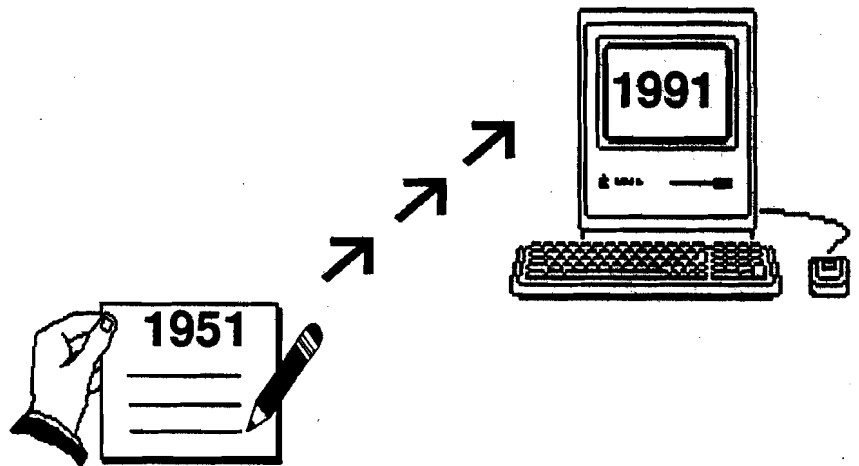
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DAIRY FARM BUSINESS SUMMARY

NORTHERN HUDSON REGION 1991



**DFBS
40th
Anniversary**

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**1991 DAIRY FARM BUSINESS SUMMARY
NORTHERN HUDSON REGION**

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**1991 DAIRY FARM BUSINESS SUMMARY
NORTHERN HUDSON REGION***

INTRODUCTION

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

Program Objective

The primary objective of the dairy farm business summary, DFBS, is to help farm managers improve the business and financial management of their business through appropriate use of historical farm data and the application of modern farm business analysis techniques. In short, DFBS identifies business and financial information farmers need and demonstrates how it should be used in identifying and evaluating strengths and weaknesses of the farm business.

Format Features

This regional report follows the same general format as in the 1991 DFBS printout received by all participating dairy farmers. The analysis tables have an open column or section labeled My Farm. It may be used by any dairy farm manager who wants to compare his or her business with the average data of this region. A DFBS Data Check-in Form can be used by non-DFBS participants to summarize their businesses.

This report features:

- (1) an income statement including accrual adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation,
- (2) a complete balance sheet with analytical ratios;
- (3) a cash flow summary including debt repayment ability;
- (4) an analysis of crop acreage, yields, and expenses;
- (5) an analysis of dairy livestock numbers, production, and expenses; and
- (6) a capital and labor efficiency analysis.

Micro DFBS, a computer program which enables Cooperative Extension agents and specialists to calculate and print individual farm business reports in their offices, is now being used by the dairy farm management field staff for nearly 100 percent of the farms cooperating. This innovative approach provides faster processing of farm record data and increased use of the DFBS in farm management programs.

*The Northern Hudson Region of New York State, with the number of participating farms in parentheses, is comprised of Albany (4), Saratoga (5), Schenectady (3), Rensselaer (22), and Washington (21) Counties. This report was written by Stuart F. Smith, Senior Extension Associate, Farm Management. Linda Putnam was in charge of data preparation. Cindy Farrell and Beverly Carcelli prepared the publication. Farm business data were collected by Cooperative Extension agents Tom Gallagher, Cathy Wickswat, and Chris Skellie.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

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

BUSINESS CHARACTERISTICS 55 Northern Hudson Region Dairy Farms, 1991

| <u>Type of Farm</u> | <u>Number</u> | <u>Type of Barn</u> | <u>Number</u> |
|-------------------------------|---------------|---------------------------|---------------|
| Dairy | 55 | Stanchion/Tie-Stall | 23 |
| Part-time dairy | 0 | Freestall | 28 |
| Dairy cash-crop | 0 | Combination | 4 |
| Part-time cash-crop dairy | 0 | | |
| | | <u>Milking System</u> | <u>Number</u> |
| <u>Type of Ownership</u> | <u>Number</u> | Bucket & carry | 0 |
| Owner | 50 | Dumping station | 0 |
| Renter | 5 | Pipeline | 27 |
| | | Herringbone parlor | 27 |
| <u>Type of Business</u> | <u>Number</u> | Other parlor | 1 |
| Single proprietorship | 36 | <u>Milking Frequency</u> | <u>Number</u> |
| Partnership | 16 | 2x/day | 47 |
| Corporation | 3 | 3x/day | 5 |
| | | Other | 3 |
| <u>Business Record System</u> | <u>Number</u> | <u>Production Records</u> | <u>Number</u> |
| ELFAC II | 3 | DHIC | 45 |
| Account Book | 12 | Owner-Sampler | 5 |
| Agrifax (mail-in only) | 15 | Other | 0 |
| On-Farm Computer | 11 | None | 5 |
| Other | 14 | | |

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 1991.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent an increase in 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
55 Northern Hudson Region Dairy Farms, 1991

| <u>Expense Item</u> | Cash Paid + | Change in Inventory or Prepaid Expense* + | Change in Accounts Payable - | Accrual Expenses |
|-------------------------------|------------------|--|------------------------------------|-------------------------|
| <u>Hired Labor</u> | \$26,504 | \$0 << | \$21 | \$26,525 |
| <u>Feed</u> | | | | |
| Dairy grain & conc. | 65,662 | 1,803 | 1,879 | 69,344 |
| Dairy roughage | 1,356 | -41 | -5 | 1,310 |
| Nondairy | 34 | 0 | 0 | 34 |
| <u>Machinery</u> | | | | |
| Mach. hire, rent/lease | 3,699 | 0 << | 7 | 3,706 |
| Machinery repairs/parts | 14,011 | -25 | -26 | 13,960 |
| Auto exp. (farm share) | 878 | 0 << | 0 | 878 |
| Fuel, oil & grease | 8,249 | 19 | 149 | 8,417 |
| <u>Livestock</u> | | | | |
| Replacement livestock | 3,833 | 0 << | 101 | 3,934 |
| Breeding | 3,869 | 107 | -30 | 3,946 |
| Vet & medicine | 7,039 | 22 | 35 | 7,096 |
| Milk marketing | 20,225 | 0 << | -8 | 20,217 |
| Cattle lease/rent | 520 | 0 << | 0 | 520 |
| Other livestock expense | 13,220 | 30 | 193 | 13,443 |
| <u>Crops</u> | | | | |
| Fertilizer & lime | 9,078 | 206 | 114 | 9,398 |
| Seeds & plants | 4,073 | 288 | 145 | 4,506 |
| Spray, other crop exp. | 3,203 | 113 | 118 | 3,434 |
| <u>Real Estate</u> | | | | |
| Land/bldg./fence repair | 2,894 | 133 | -31 | 2,996 |
| Taxes | 7,869 | 0 << | 150 | 8,019 |
| Rent & lease | 5,923 | 0 << | 18 | 5,941 |
| <u>Other</u> | | | | |
| Insurance | 4,713 | 27 << | -71 | 4,669 |
| Telephone (farm share) | 817 | 0 << | 1 | 818 |
| Electricity (farm share) | 7,115 | 0 << | -7 | 7,108 |
| Interest paid | 20,269 | 0 << | 845 | 21,114 |
| Miscellaneous | 2,832 | 33 | 29 | 2,894 |
| Total Operating | <u>\$237,885</u> | <u>\$2,715</u> | <u>\$3,627</u> | <u>\$244,227</u> |
| Expansion livestock | 1,906 | 0 << | 0 | 1,906 |
| Machinery depreciation | | | | 14,160 |
| Building depreciation | | | | 8,005 |
| TOTAL ACCRUAL EXPENSES | | | | <u>\$268,298</u> |

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, 1992 rent paid in 1991. If 1991 funds used to prepay 1992 rent exceeded the amount of 1991 rent prepaid in 1990, the amount of this excess is entered as a negative number to exclude it from 1991 accrual rental expenses. The excess prepaid rent should be charged against the future year's business operation. A decrease in prepaid rent is added to accrual expenses because it represents use of resources during this year that were paid for in past years.

Change in accounts payable: An increase in accounts payable from beginning to end of year is added and a decrease is subtracted when calculating accrual expenses.

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

CASH AND ACCRUAL FARM RECEIPTS
55 Northern Hudson Region Dairy Farms, 1991

| <u>Receipt Item</u> | Cash Receipts | + | Change in Inventory | + | Change in Accounts Receivable | - | Accrual Receipts |
|-----------------------------|------------------|-----|------------------------|---|-------------------------------------|-----|---------------------|
| Milk sales | \$248,210 | | | | \$1,889 | | \$250,099 |
| Dairy cattle | 18,223 | | \$3,901 | | -15 | | 22,109 |
| Dairy calves | 4,257 | | | | 16 | | 4,273 |
| Other livestock | 17 | | -120 | | 0 | | -103 |
| Crops | 2,391 | | 2,213 | | 206 | | 4,810 |
| Government receipts | 3,064 | | 0* | | 0 | | 3,064 |
| Custom machine work | 1,228 | | | | 15 | | 1,243 |
| Gas tax refund | 136 | | | | 0 | | 136 |
| Other | 2,717 | | | | 19 | | 2,736 |
| Less nonfarm noncash cap.** | | (-) | 0 | | | (-) | 0 |
| Total Receipts | \$280,243 | | \$5,994 | | \$2,130 | | \$288,367 |

*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. Changes in advanced government receipts are calculated by subtracting the end year balance from the beginning year balance (balances are listed with the current liabilities on the Balance Sheet).

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

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

Profitability Analysis

Farm operators contribute labor, management, and capital to their businesses and the combination of these resources selected determines income. 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.

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

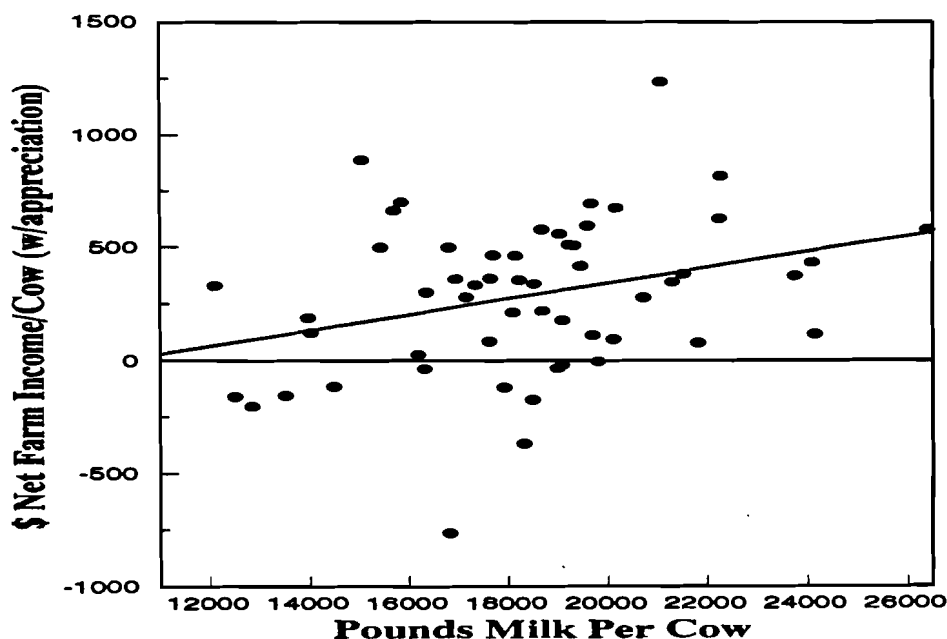
Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes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

NET FARM INCOME
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | My Farm |
|--|-----------|----------|
| Total accrual receipts | \$288,367 | \$ _____ |
| Appreciation: Livestock | 1,364 | _____ |
| Machinery | 1,983 | _____ |
| Real Estate | 8,710 | _____ |
| Other Stock/Certificates | -965 | _____ |
| Total Including Appreciation | \$299,459 | \$ _____ |
| Total accrual expenses | - 268,298 | - _____ |
| Net Farm Income (with appreciation) | \$31,161 | \$ _____ |
| Net Farm Income (without appreciation) | \$20,069 | \$ _____ |

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
55 Northern Hudson Region Farms, 1991



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

**RETURN TO OPERATORS' LABOR, MANAGEMENT, AND EQUITY
55 Northern Hudson Region Dairy Farms, 1991**

| Item | Average | | My Farm | |
|---|-----------------|--------------------|-----------------|--------------------|
| | With Apprec. | Without Apprec. | With Apprec. | Without Apprec. |
| Net farm income | \$31,161 | \$20,069 | \$_____ | \$_____ |
| Family labor unpaid @ \$1,300 per month | - 3,380 | - 3,380 | - _____ | - _____ |
| Return to operators' labor, management, & equity | \$27,781 | \$16,689 | \$_____ | \$_____ |

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

**LABOR AND MANAGEMENT INCOME
55 Northern Hudson Region Dairy Farms, 1991**

| Item | Average | My Farm |
|--|----------|---------|
| Return to operators' labor, management, & equity without appreciation | \$16,689 | \$_____ |
| Real interest @ 5% on \$523,815 average equity capital | - 26,191 | - _____ |
| Labor & Management Income | \$-9,502 | \$_____ |
| Labor & Management Income per 1.38 Operator/Manager | \$-6,886 | \$_____ |

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

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
55 Northern Hudson Region Dairy Farms, 1991

| <u>Item</u> | <u>Average</u> | <u>My Farm</u> |
|---|----------------|----------------|
| Return to operators' labor, management, & equity capital with appreciation | \$27,781 | \$ _____ |
| Value of operators' labor & management | - 29,305 | - _____ |
| Return on equity capital with appreciation | \$-1,524 | \$ _____ |
| Interest paid | \$21,114 | \$ _____ |
| Return on total capital with appreciation | \$19,590 | \$ _____ |
| Return on equity capital without appreciation | \$-12,616 | \$ _____ |
| Return on total capital without appreciation | \$8,498 | \$ _____ |
| Rate of return on average equity capital: | | |
| with appreciation | -.29% | _____ % |
| without appreciation | -2.41% | _____ % |
| Rate of return on average total capital: | | |
| with appreciation | 2.47% | _____ % |
| without appreciation | 1.07% | _____ % |

Farm and Family Financial Status

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

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 1991, leases were discounted by 10.0 percent.

Advanced government receipts are included as current liabilities. Government payments received in 1991 that are for participation in the 1992 program are the end year balance and payments received in 1990 for participation in the 1991 program are the beginning year balance.

1991 FARM BUSINESS & NONFARM BALANCE SHEET
55 Northern Hudson Region Dairy Farms, January 1, 1992

| <u>Farm Assets</u> | | | <u>Farm Liabilities & Net Worth</u> | | |
|-------------------------------|------------------|------------------|---|------------------|------------------|
| | Jan. 1 | Dec. 31 | | Jan. 1 | Dec. 31 |
| <u>Current</u> | | | <u>Current</u> | | |
| Farm cash, checking & savings | \$4,398 | \$3,313 | Accounts payable | \$7,133 | \$10,763 |
| Accounts rec. | 20,297 | 22,427 | Operating debt | 7,271 | 8,095 |
| Prepaid exp. | 64 | 37 | Short-term | 1,753 | 1,646 |
| Feed & supplies | 55,726 | 55,250 | Advanced govt. rec. | 0 | 0 |
| Total | \$80,485 | \$81,027 | Total | \$16,157 | \$20,504 |
| <u>Intermediate</u> | | | <u>Intermediate</u> | | |
| <u>Dairy cows:</u> | | | <u>Structured debt</u> | | |
| owned | \$108,931 | \$110,714 | 1-10 years | \$104,751 | \$109,710 |
| leased | 361 | 239 | Financial lease | | |
| Heifers | 43,860 | 47,292 | (cattle/mach.) | 3,706 | 4,094 |
| Bulls/other lvstk. | 1,224 | 1,154 | Farm Credit stock | 6,671 | 7,059 |
| Mach./eq. owned | 124,891 | 126,162 | Total | \$115,128 | \$120,863 |
| Mach./eq. leased | 3,345 | 3,855 | | | |
| Farm Credit stock | 6,671 | 7,059 | | | |
| Other stock/cert. | 12,668 | 12,069 | | | |
| Total | \$301,951 | \$308,544 | | | |
| <u>Long-Term</u> | | | <u>Long Term</u> | | |
| <u>Land/buildings:</u> | | | <u>Structured debt</u> | | |
| owned | \$406,150 | \$409,833 | >10 yrs | \$135,904 | \$131,804 |
| leased | 179 | 41 | Financial lease | | |
| Total | \$406,329 | \$409,874 | (structures) | 179 | 41 |
| Total Farm Assets | \$788,765 | \$799,445 | Total | \$136,083 | \$131,845 |
| | | | Total Farm Liab. | \$267,368 | \$273,212 |
| | | | FARM NET WORTH | \$521,397 | \$526,233 |

Nonfarm Assets, Liabilities & Net Worth (Average of 27 farms reporting)

| <u>Assets</u> | | | <u>Liabilities & Net Worth</u> | | |
|--------------------------------|-----------------|-----------------|------------------------------------|-----------------|-----------------|
| | Jan. 1 | Dec. 31 | | Jan. 1 | Dec. 31 |
| Personal cash, chkg. & savings | \$10,866 | \$7,887 | Nonfarm Liab. | \$2,794 | \$3,101 |
| Cash value life ins. | 12,747 | 8,585 | | | |
| Nonfarm real estate | 11,222 | 11,222 | | | |
| Auto (personal sh.) | 2,504 | 2,207 | | | |
| Stocks & bonds | 6,267 | 6,780 | | | |
| Household furn. | 10,259 | 11,199 | | | |
| All other | 15,239 | 18,256 | | | |
| Total Nonfarm | \$69,104 | \$66,136 | NONFARM NET WORTH | \$66,310 | \$63,035 |

| <u>Farm & Nonfarm Assets, Liabilities, & Net Worth*</u> | | |
|---|------------------|------------------|
| | Jan. 1 | Dec. 31 |
| Total Assets | \$857,869 | \$865,581 |
| Total Liabilities | 270,162 | 276,313 |
| TOTAL FARM & NONFARM NET WORTH | \$587,707 | \$589,268 |

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

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability. The change in farm net worth without appreciation is an excellent indicator of farm generated financial progress.

BALANCE SHEET ANALYSIS
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | My Farm | | |
|---|----------------|--------------------------------|----------------|--------------------------------|
| <u>Financial Ratios - Farm:</u> | | | | |
| Percent equity | 66% | _____ % | | |
| Debt/asset ratio: total | .34 | _____ | | |
| long-term | .32 | _____ | | |
| intermediate/current | .36 | _____ | | |
| <u>Change in Net Worth:</u> | | | | |
| Without appreciation | \$-6,256 | \$ _____ | | |
| With appreciation | \$4,836 | \$ _____ | | |
| <u>Farm Debt Analysis:</u> | | | | |
| Accounts payable as % of total debt | 4% | _____ % | | |
| Long-term liabilities as a % of total debt | 48% | _____ % | | |
| Current & inter. liab. as a % of total debt | 52% | _____ % | | |
| <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 | \$2,602 | \$1,561 | \$ _____ | \$ _____ |
| Long-term debt | 1,256 | 753 | _____ | _____ |
| Intermediate & current debt | 1,346 | 808 | _____ | _____ |

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
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average of Region's Farms | | |
|--------------------|---------------------------|-----------------------|--|
| | Real Estate | Machinery & Equipment | |
| Value beg. of year | \$406,150 | \$124,891 | |
| Purchases | \$7,817* | \$14,428 | |
| Gift/inheritance | + 0 | + 0 | |
| Lost capital | - 2,503 | - -- | |
| Sales | - 1,255 | - 980 | |
| Depreciation | - 8,005 | - 14,160 | |
| Net investment | - -3,946 | - -712 | |
| Appreciation | + 7,629** | + 1,983 | |
| Value end of year | \$409,833 | \$126,162 | |

*\$435 land and \$7,382 buildings and/or depreciable improvements.

**Excludes \$1,081 of appreciation on assets sold during the year.

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 compare all the cash inflows including beginning balances with all the cash outflows including ending balances for the year. By definition, total cash inflows must equal total cash outflows when beginning and ending balances are included. Any imbalance is, therefore, the error from incorrect accounting of cash inflows and cash outflows. Whenever an imbalance exists, all other financial measures may also be in error.

ANNUAL CASH FLOW STATEMENT
55 Northern Hudson Region Dairy Farms, 1991

| <u>Item</u> | <u>Average</u> | <u>My Farm</u> |
|--|----------------|----------------|
| <u>Cash Inflows</u> | | |
| Beginning farm cash, checking & savings | \$ 4,398 | \$ _____ |
| Cash farm receipts | 280,243 | _____ |
| Sale of assets: Machinery | 980 | _____ |
| Real estate | 2,331 | _____ |
| Other stock & certificate | 69 | _____ |
| Money borrowed (intermediate & long-term) | 38,493 | _____ |
| Money borrowed (short-term) | 794 | _____ |
| Increase in operating debt | 824 | _____ |
| Nonfarm income | 5,325 | _____ |
| Cash from nonfarm capital used in the business | 2,398 | _____ |
| Money borrowed - nonfarm | 414 | _____ |
| Total | \$336,269 | \$ _____ |
| <u>Cash Outflows</u> | | |
| Cash farm expenses | \$237,885 | \$ _____ |
| Capital purchases: Expansion livestock | 1,906 | _____ |
| Machinery | 14,428 | _____ |
| Real estate | 7,817 | _____ |
| Other stock & certificate | 435 | _____ |
| Principal payments (intermediate & long-term) | 37,634 | _____ |
| Principal payments (short-term) | 901 | _____ |
| Decrease in operating debt | 0 | _____ |
| Personal withdrawals & family expenditures | | |
| including nonfarm debt payments | 31,441 | _____ |
| Ending farm cash, checking & savings | 3,313 | _____ |
| Total | \$335,762 | \$ _____ |
| Imbalance (error) | \$507 | \$ _____ |

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 1992. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1992 debt payments shown below.

FARM DEBT PAYMENTS PLANNED
Same 39 Northern Hudson Region Dairy Farms, 1990 & 1991

| Debt Payments | Average | | | My Farm | | |
|-------------------------------------|--------------------------|----------|-----------------|--------------------------|----------|-----------------|
| | 1991 Payments Planned | Made | Planned 1992 | 1991 Payments Planned | Made | Planned 1992 |
| Long-term | \$17,607 | \$16,578 | \$16,467 | \$ _____ | \$ _____ | \$ _____ |
| Intermediate-term | 26,129 | 43,676 | 26,091 | _____ | _____ | _____ |
| Short-term | 1,566 | 1,031 | 697 | _____ | _____ | _____ |
| Operating (net reduction) | 447 | 0 | 153 | _____ | _____ | _____ |
| Accounts payable (net reduction) | 0 | 0 | 202 | _____ | _____ | _____ |
| Total | \$45,749 | \$61,285 | \$43,610 | \$ _____ | \$ _____ | \$ _____ |
| Per cow | \$449 | \$601 | | \$ _____ | \$ _____ | |
| Per cwt. 1991 milk | \$2.42 | \$3.24 | | \$ _____ | \$ _____ | |
| Percent of total 1991 receipts | 16% | 21% | | _____ | _____ | |
| Percent of 1991 milk receipts | 19% | 25% | | _____ | _____ | |

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of payments planned for 1991 (as of December 31, 1990) that could have been made with the amount available for debt service in 1991. Farmers who did not participate in DFBS in 1990 have their 1991 cash flow coverage ratio based on planned debt payments for 1992.

CASH FLOW COVERAGE RATIO
Same 39 Northern Hudson Region Dairy Farms, 1990 & 1991

| Item | Average | My Farm |
|---|-----------|----------|
| Cash farm receipts | \$278,357 | \$ _____ |
| - Cash farm expenses | 236,088 | _____ |
| + Interest paid | 20,199 | _____ |
| - Net personal withdrawals from farm** | 25,853 | _____ |
| (A) = Amount Available for Debt Service | \$36,615 | \$ _____ |
| (B) = Debt Payments Planned for 1991 (as of December 31, 1990) | \$45,749 | \$ _____ |
| (A + B) = Cash Flow Coverage Ratio for 1991 | .80 | _____ |

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

ANNUAL CASH FLOW WORKSHEET

| Item | Regional | My Farm | | Expected | 1992 |
|---|------------|---------|---------|----------|------|
| | Average | Total | Per Cow | | |
| | (per cow) | | | | |
| Average number of cows | 102.1 | | | | |
| <u>Accrual Oper. Receipts</u> | | | | | |
| Milk | \$2,449.55 | \$ | \$ | | \$ |
| Dairy cattle | 216.54 | | | | |
| Dairy calves | 41.85 | | | | |
| Other livestock | -1.01 | | | | |
| Crops | 47.11 | | | | |
| Misc. receipts | 70.31 | | | | |
| Total | \$2,824.35 | \$ | \$ | | \$ |
| <u>Accrual Oper. Expenses</u> | | | | | |
| Hired labor | \$259.79 | \$ | \$ | | \$ |
| Dairy grain & conc. | 679.18 | | | | |
| Dairy roughage | 12.83 | | | | |
| Nondairy feed | .33 | | | | |
| Mach. hire/rent/lease | 36.30 | | | | |
| Mach. rpr./parts & auto | 145.34 | | | | |
| Fuel, oil & grease | 82.44 | | | | |
| Replacement lvstk. | 38.53 | | | | |
| Breeding | 38.65 | | | | |
| Vet & medicine | 69.50 | | | | |
| Milk marketing | 198.01 | | | | |
| Cattle lease | 5.09 | | | | |
| Other livestock exp. | 131.67 | | | | |
| Fertilizer & lime | 92.06 | | | | |
| Seeds & plants | 44.14 | | | | |
| Spray/other crop exp. | 33.63 | | | | |
| Land, bldg., fence repair | 29.34 | | | | |
| Taxes | 78.54 | | | | |
| Real estate rent/lease | 58.20 | | | | |
| Insurance | 45.73 | | | | |
| Utilities | 77.62 | | | | |
| Miscellaneous | 28.34 | | | | |
| Total Less Int. Paid | \$2,185.26 | | | | \$ |
| <u>Net Accrual Operating Income</u> | (total) | | | | |
| (without interest paid) | \$65,248 | \$ | | | \$ |
| - Change in lvstk./crop inv.* | 5,994 | | | | |
| - Change in accts. rec. | 2,130 | | | | |
| + Change in feed/supply inv.** | 2,715 | | | | |
| + Change in accts. payable*** | 2,782 | | | | |
| NET CASH FLOW | \$62,621 | \$ | | | \$ |
| - Net personal withdrawals from farm (see footnote on pg. 12) | 25,702 | | | | |
| Available for Farm Debt | | | | | |
| Payments & Investments | \$36,919 | \$ | | | \$ |
| - Farm debt payments | 58,173 | | | | |
| Available for Farm Investment | \$-21,254 | \$ | | | \$ |
| - Capital purchases: cattle, machinery & improvements | \$24,586 | | | | |
| Additional Capital Needed | | \$ | | | \$ |

*Includes change in advance government receipts.

**Includes change in prepaid expenses.

***Excludes change in interest account payable.

Cropping Analysis

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

LAND RESOURCES AND CROP PRODUCTION
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | | | My Farm | | |
|----------------------|--------------|---------------|------------------|--------------|------------------|-------|
| | Owned | Rented | Total | Owned | Rented | Total |
| <u>Land</u> | | | | | | |
| Tillable | 175 | 151 | 326 | _____ | _____ | _____ |
| Nontillable | 52 | 17 | 69 | _____ | _____ | _____ |
| Other nontillable | 100 | 17 | 117 | _____ | _____ | _____ |
| Total | 327 | 186 | 513 | _____ | _____ | _____ |
| <u>Crop Yields</u> | <u>Farms</u> | <u>Acres*</u> | <u>Prod/Acre</u> | <u>Acres</u> | <u>Prod/Acre</u> | |
| Hay crop | 54 | 177 | 2.41 tn DM | _____ | _____ | tn DM |
| Corn silage | 54 | 96 | 13.62 tn | _____ | _____ | tn |
| | | | 4.81 tn DM | _____ | _____ | tn DM |
| Other forage | 1 | 35 | 1.14 tn DM | _____ | _____ | tn DM |
| Total forage | 55 | 268 | 3.23 tn DM | _____ | _____ | tn DM |
| Corn grain | 31 | 67 | 108.92 bu | _____ | _____ | bu |
| Oats | 3 | 8 | 30.87 bu | _____ | _____ | bu |
| Wheat | 1 | 15 | 23.33 bu | _____ | _____ | bu |
| Other crops | 7 | 26 | | _____ | _____ | |
| Tillable pasture | 8 | 39 | | _____ | _____ | |
| Idle | 16 | 38 | | _____ | _____ | |
| Total Tillable Acres | 55 | 326 | | _____ | _____ | |

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 173, corn silage 94, corn grain 38, oats 0, tillable pasture 6, 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
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | My Farm |
|---|---------|---------|
| Total tillable acres per cow | 3.19 | _____ |
| Total forage acres per cow | 2.62 | _____ |
| Harvested forage dry matter, tons per cow | 8.47 | _____ |

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.

CROP RELATED ACCRUAL EXPENSES
Northern Hudson Region Dairy Farms Reporting, 1991

| Item | Total | Hay Crop | | All | Corn | Corn |
|----------------------------|----------------|-------------|-------------|---------------|-------------------|-------------------------|
| | Per Till. Acre | Per Acre | Per Ton DM | Corn Per Acre | Silage Per Ton DM | Grain Per Dry Shell Bu. |
| Number of farms reporting | 55 | | 10 | 10 | | |
| Average number of acres | 326 | | 137 | 77 | | |
| Fertilizer & lime | \$28.83 | \$16.99 | \$7.77 | \$46.14 | \$11.88 | \$.40 |
| Seeds & plants | 13.83 | 7.47 | 3.42 | 22.77 | 5.86 | .20 |
| Spray & other crop expense | <u>10.53</u> | <u>7.16</u> | <u>3.28</u> | <u>13.81</u> | <u>3.55</u> | <u>.12</u> |
| Total | \$53.19 | \$31.62 | \$14.47 | \$82.72 | \$21.29 | \$.72 |

My Farm:

| | | | | | | |
|----------------------------|----------|----------|----------|----------|----------|----------|
| Fertilizer & lime | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ | \$ _____ |
| Seeds & plants | _____ | _____ | _____ | _____ | _____ | _____ |
| Spray & other crop expense | _____ | _____ | _____ | _____ | _____ | _____ |
| 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
55 Northern Hudson Region Dairy Farms, 1991

| Machinery Expense Item | Average | | My Farm | |
|----------------------------|----------------|---------------|----------------|---------------|
| | Total Expenses | Per Til. Acre | Total Expenses | Per Til. Acre |
| Fuel, oil & grease | \$8,417 | \$25.82 | \$ _____ | \$ _____ |
| Machinery repairs & parts | 13,961 | 42.83 | _____ | _____ |
| Machine hire, rent & lease | 3,706 | 11.37 | _____ | _____ |
| Auto expense (farm share) | 878 | 2.69 | _____ | _____ |
| Interest (5%) | 6,276 | 19.25 | _____ | _____ |
| Depreciation | <u>14,160</u> | <u>43.44</u> | _____ | _____ |
| Total | \$47,398 | \$145.39 | \$ _____ | \$ _____ |

Dairy Analysis

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

DAIRY HERD INVENTORY
55 Northern Hudson Region Dairy Farms, 1991

| Item | Dairy Cows | | Bred | | Heifers | | Calves | |
|----------------------|------------|-----------|---------------------|----------|---------|----------|--------|---------|
| | No. | Value | No. | Value | No. | Value | No. | Value |
| Beg. year (owned) | 103 | \$108,931 | 28 | \$24,083 | 25 | \$12,840 | 26 | \$6,937 |
| + Change w/o apprec. | | 1,186 | | 2,080 | | 765 | | -129 |
| + Appreciation | | 597 | | -35 | | 415 | | 336 |
| End year (owned) | 104 | \$110,714 | 30 | \$26,128 | 27 | \$14,020 | 31 | \$7,144 |
| End incl. leased | 105 | | | | | | | |
| Average number | 102 | | 80 (all age groups) | | | | | |

My Farm:

| | | | | | | | | |
|----------------------|-----|--------|----------------------|--------|-----|--------|-----|--------|
| Beg. of year (owned) | ___ | \$ ___ | ___ | \$ ___ | ___ | \$ ___ | ___ | \$ ___ |
| + Change w/o apprec. | | ___ | | ___ | | ___ | | ___ |
| + Appreciation | | ___ | | ___ | | ___ | | ___ |
| End of year (owned) | ___ | \$ ___ | ___ | \$ ___ | ___ | \$ ___ | ___ | \$ ___ |
| End including leased | ___ | | | | | | | |
| Average number | ___ | | ___ (all age groups) | | | | | |

Total milk sold and milk sold per cow are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

MILK PRODUCTION
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | My Farm |
|--|-----------|---------|
| Total milk sold, lbs. | 1,894,843 | _____ |
| Milk sold per cow, lbs. | 18,557 | _____ |
| Average milk plant test, percent butterfat | 3.74 | _____ |

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. 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. Total costs without operator's labor, management, and capital are the operating costs plus depreciation and unpaid family labor.

ACCRUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | | | My Farm | | |
|---|-----------|---------|----------|---------|---------|----------|
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| <u>Accrual Costs of Producing Milk</u> | | | | | | |
| Operating costs | \$207,864 | \$2,036 | \$10.97 | \$_____ | \$_____ | \$_____ |
| Total costs w/o opers' labor, mgmt. & capital | \$233,409 | \$2,286 | \$12.32 | \$_____ | \$_____ | \$_____ |
| Total Costs | \$288,905 | \$2,830 | \$15.25 | \$_____ | \$_____ | \$_____ |
| <u>Accrual Receipts</u> | | | | | | |
| From Milk | \$250,099 | \$2,450 | \$13.20 | \$_____ | \$_____ | \$_____ |

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

DAIRY RELATED ACCRUAL EXPENSES
55 Northern Hudson Region Dairy Farms, 1991

| Item | Average | | My Farm | |
|---|---------|----------|---------|----------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Purchased dairy grain & concentrates | \$679 | \$3.66 | \$_____ | \$_____ |
| Purchased dairy roughage | 13 | .07 | _____ | _____ |
| Total Purchased Dairy Feed | \$692 | \$3.73 | \$_____ | \$_____ |
| Purchased grain & conc. as % of milk receipts | | 28% | | ____% |
| Purchased feed & crop exp. | \$862 | \$4.64 | \$_____ | \$_____ |
| Purchased feed & crop exp. as % of milk receipts | | 35% | | ____% |
| Breeding | \$39 | \$.21 | \$_____ | \$_____ |
| Veterinary & medicine | 70 | .37 | _____ | _____ |
| Milk marketing | 198 | 1.07 | _____ | _____ |
| Cattle lease | 5 | .03 | _____ | _____ |
| Other livestock expense | 132 | .71 | _____ | _____ |

Capital and Labor Efficiency Analysis

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

CAPITAL EFFICIENCY
55 Northern Hudson Region Dairy Farms, 1991

| Item | Per Worker | Per Cow | Per Tillable Acre | Per Tillable Acre Owned |
|-------------------------|------------|----------|-------------------|-------------------------|
| Farm capital | \$248,499 | \$7,778 | \$2,436 | \$4,538 |
| Real estate | | 3,997 | | 2,332 |
| Machinery & equipment | 40,407 | 1,265 | 396 | |
| Capital turnover, years | 2.65 | | | |
| My Farm: | | | | |
| Farm capital | \$ _____ | \$ _____ | \$ _____ | \$ _____ |
| Real estate | _____ | _____ | _____ | _____ |
| Machinery & equipment | _____ | _____ | _____ | _____ |
| Capital turnover, years | _____ | | | |

LABOR FORCE INVENTORY AND ANALYSIS
55 Northern Hudson Region Dairy Farms, 1991

| Labor Force | Months | Age | Years of Educ. | Value of Labor & Mgmt. |
|-----------------------|--------------|---|----------------|------------------------|
| Operator number 1 | 11.13 | 45 | 13 | \$20,318 |
| Operator number 2 | 4.09 | 39 | 14 | 6,591 |
| Operator number 3 | 1.35 | 30 | 13 | 2,395 |
| Family paid | 5.73 | | | |
| Family unpaid | 2.60 | | | |
| Hired | <u>13.45</u> | | | |
| Total | 38.35 | + 12 = 3.20 Worker Equivalent 1.38 Operator/Manager Equiv. | | |
| My Farm: Total | | | | |
| Operator's | _____ | + 12 = _____ Worker Equivalent _____ Operator/Manager Equiv. | | |

| Labor Efficiency | Average | | My Farm | |
|----------------------|-----------|------------|---------|------------|
| | Total | Per Worker | Total | Per Worker |
| Cows, average number | 102 | 32 | _____ | _____ |
| Milk sold, pounds | 1,894,843 | 592,952 | _____ | _____ |
| Tillable acres | 326 | 102 | _____ | _____ |
| Work units | 1,084 | 339 | _____ | _____ |

| Labor Costs | Total | Average | | My Farm | | |
|--|---------------|------------|---------------|----------|----------|---------------|
| | | Per Cow | Per Til. Acre | Total | Per Cow | Per Til. Acre |
| Value of operator(s) labor (\$1,300/mo.) | \$21,541 | \$211 | \$66.08 | \$ _____ | \$ _____ | \$ _____ |
| Family unpaid (\$1,300/mo.) | 3,380 | 33 | 10.37 | _____ | _____ | _____ |
| Hired | <u>26,525</u> | <u>260</u> | <u>81.37</u> | _____ | _____ | _____ |
| Total Labor | \$51,446 | \$504 | \$157.81 | \$ _____ | \$ _____ | \$ _____ |
| Machinery Cost | \$47,398 | \$464 | \$145.39 | \$ _____ | \$ _____ | \$ _____ |
| Total Labor & Mach. | \$98,844 | \$968 | \$303.20 | \$ _____ | \$ _____ | \$ _____ |

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 is one part of a business checkup. It is equally important for you to determine the progress your business has made over the past two or three years and to set targets or goals for the future.

PROGRESS OF THE FARM BUSINESS

Same 39 Northern Hudson Region Dairy Farms, 1990 & 1991

| Selected Factors | Average of 39 Farms* | | My Farm | | |
|---|----------------------|-----------|---------|---------|---------|
| | 1990 | 1991 | 1990 | 1991 | Goal |
| <u>Size of Business</u> | | | | | |
| Average number of cows | 99 | 102 | _____ | _____ | _____ |
| Average number of heifers | 74 | 77 | _____ | _____ | _____ |
| Milk sold, lbs. | 1,731,849 | 1,890,108 | _____ | _____ | _____ |
| Worker equivalent | 3.11 | 3.20 | _____ | _____ | _____ |
| Total tillable acres | 315 | 316 | _____ | _____ | _____ |
| <u>Rates of Production</u> | | | | | |
| Milk sold per cow, lbs. | 17,417 | 18,452 | _____ | _____ | _____ |
| Hay DM per acre, tons | 2.52 | 2.33 | _____ | _____ | _____ |
| Corn silage per acre, tons | 14 | 14 | _____ | _____ | _____ |
| <u>Labor Efficiency</u> | | | | | |
| Cows per worker | 32 | 32 | _____ | _____ | _____ |
| Milk sold/worker, lbs. | 557,026 | 591,287 | _____ | _____ | _____ |
| <u>Cost Control</u> | | | | | |
| Grain & conc. purchased as % of milk sales | 27% | 28% | _____% | _____% | _____% |
| Dairy feed & crop exp. per cwt. milk | \$5.34 | \$4.70 | \$_____ | \$_____ | \$_____ |
| Labor & mach. costs/cow | \$1,001 | \$946 | \$_____ | \$_____ | \$_____ |
| <u>Capital Efficiency**</u> | | | | | |
| Farm capital per cow | \$7,491 | \$7,604 | \$_____ | \$_____ | \$_____ |
| Mach. & equip. per cow | \$1,229 | \$1,237 | \$_____ | \$_____ | \$_____ |
| Capital turnover, years | 2.34 | 2.64 | _____ | _____ | _____ |
| <u>Profitability</u> | | | | | |
| Net farm inc. w/o apprec. | \$36,152 | \$18,133 | \$_____ | \$_____ | \$_____ |
| Net farm inc. w/apprec. | \$42,358 | \$28,274 | \$_____ | \$_____ | \$_____ |
| Labor & mgt. income per oper./manager | \$5,409 | \$-7,102 | \$_____ | \$_____ | \$_____ |
| Rate of return on eq. capital w/apprec. | 1% | -1% | _____% | _____% | _____% |
| Rate of return on all capital w/apprec. | 4% | 2% | _____% | _____% | _____% |
| <u>Financial Summary</u> | | | | | |
| Farm net worth, end year | \$491,165 | \$496,771 | \$_____ | \$_____ | \$_____ |
| Debt to asset ratio | .36 | .37 | _____ | _____ | _____ |
| Farm debt per cow | \$2,639 | \$2,748 | \$_____ | \$_____ | \$_____ |

*Farms participating both years.

**Average for the year.

Regional Farm Business Chart

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column which represents your current level of performance. The five figures in each column represent the average of each 20 percent or quintile of farms included in the regional summary.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
55 Northern Hudson Region Dairy Farms, 1991

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|---------------------------|-------------------|------------------------|--------------------------------|-----------------------------|---------------------------------|-----------------------|-----------------------------------|
| Worker Equiv- alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| (10)* | (10) | (10) | (9) | (8) | (8) | (10) | (10) |
| 5.5 | 210 | 4,075,322 | 22,670 | 3.6 | 18 | 48 | 838,675 |
| 3.6 | 113 | 2,104,123 | 19,567 | 2.7 | 15 | 34 | 642,425 |
| 2.9 | 79 | 1,395,382 | 18,466 | 2.3 | 14 | 30 | 559,872 |
| 2.3 | 62 | 1,079,082 | 16,990 | 2.0 | 12 | 26 | 458,687 |
| 1.7 | 46 | 820,306 | 14,139 | 1.4 | 9 | 20 | 343,119 |

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 |
|----------------------------|-----------------------------------|-------------------------------|---------------------------------------|------------------------------------|--|
| (9) | (9) | (10) | (10) | (9) | (9) |
| \$422 | 17% | \$338 | \$732 | \$570 | \$3.04 |
| 546 | 23 | 383 | 905 | 726 | 4.14 |
| 643 | 27 | 456 | 1,011 | 838 | 4.62 |
| 781 | 33 | 539 | 1,102 | 985 | 5.25 |
| 913 | 39 | 692 | 1,365 | 1,122 | 6.41 |

| 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. |
| (9) | (9) | (9) | (3) | (3) | (3) | (5) |
| \$2,967 | \$8.15 | \$12.63 | \$98,019 | \$74,979 | \$24,343 | \$57,272 |
| 2,596 | 10.32 | 14.47 | 40,522 | 31,033 | 3,669 | 11,490 |
| 2,413 | 11.18 | 15.72 | 23,250 | 16,108 | -8,914 | -723 |
| 2,180 | 11.92 | 17.61 | 10,273 | 2,636 | -24,214 | -11,851 |
| 1,929 | 13.67 | 19.97 | -16,297 | -24,446 | -43,355 | -32,024 |

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

New York State 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 figure at the top of each column is the average of the top 10 percent of the 395 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 395 New York Dairy Farms, 1990

| 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 |
| (10)* | (10) | (10) | (9) | (8) | (8) | (10) | (10) |
| 8.7 | 349 | 6,643,712 | 21,193 | 4.5 | 20 | 48 | 870,895 |
| 4.7 | 157 | 2,871,316 | 19,629 | 3.6 | 18 | 40 | 691,021 |
| 3.9 | 118 | 2,089,248 | 18,650 | 3.2 | 17 | 35 | 615,415 |
| 3.3 | 98 | 1,691,784 | 17,988 | 3.0 | 16 | 32 | 561,437 |
| 3.0 | 81 | 1,417,006 | 17,422 | 2.8 | 15 | 30 | 510,328 |
| ----- | | | | | | | |
| 2.6 | 70 | 1,151,117 | 16,875 | 2.5 | 14 | 28 | 463,936 |
| 2.3 | 60 | 968,206 | 16,322 | 2.3 | 13 | 26 | 429,166 |
| 2.1 | 53 | 837,604 | 15,455 | 2.0 | 12 | 24 | 387,958 |
| 1.8 | 46 | 693,783 | 14,054 | 1.8 | 11 | 22 | 339,968 |
| 1.3 | 35 | 507,451 | 11,686 | 1.3 | 8 | 17 | 240,302 |

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 |
|----------------------|-----------------------------|-------------------------|---------------------------------|------------------------------|------------------------------------|
| (9) | (9) | (10) | (10) | (9) | (9) |
| \$ 366 | 15% | \$265 | \$ 692 | \$ 517 | \$3.40 |
| 476 | 20 | 351 | 823 | 645 | 4.13 |
| 542 | 23 | 390 | 901 | 721 | 4.46 |
| 611 | 25 | 429 | 945 | 781 | 4.74 |
| 667 | 27 | 466 | 999 | 833 | 4.97 |
| ----- | | | | | |
| 719 | 29 | 496 | 1,058 | 891 | 5.26 |
| 770 | 31 | 530 | 1,109 | 949 | 5.52 |
| 827 | 32 | 575 | 1,173 | 1,014 | 5.80 |
| 899 | 35 | 638 | 1,273 | 1,099 | 6.24 |
| 1,058 | 40 | 807 | 1,474 | 1,279 | 7.11 |

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

**FARM BUSINESS CHART FOR FARM
MANAGEMENT COOPERATORS**
395 New York Dairy Farms, 1990

| 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. |
|-----------------------|------------------------|-------------------------|--------------------------|-------------------------------|--------------------------------|
| (9) | (9) | (9) | (9) | (9) | (9) |
| \$3,201 | \$16.32 | \$1,112 | \$ 7.19 | \$1,997 | \$12.78 |
| 2,966 | 15.63 | 1,425 | 8.96 | 2,311 | 14.06 |
| 2,806 | 15.27 | 1,547 | 9.65 | 2,461 | 14.77 |
| 2,669 | 14.98 | 1,668 | 10.15 | 2,594 | 15.32 |
| 2,589 | 14.83 | 1,791 | 10.68 | 2,710 | 15.80 |
| ----- | | | | | |
| 2,496 | 14.69 | 1,922 | 11.20 | 2,802 | 16.29 |
| 2,390 | 14.57 | 2,036 | 11.69 | 2,921 | 16.99 |
| 2,262 | 14.44 | 2,151 | 12.29 | 3,041 | 17.69 |
| 2,064 | 14.23 | 2,281 | 13.14 | 3,196 | 19.04 |
| 1,721 | 13.59 | 2,593 | 14.90 | 3,651 | 22.69 |

Profitability

| Net Farm Income | | Return to Operator's Labor, Management, & Equity Capital | | Labor & Management Income | |
|-------------------|----------------------|--|----------------------|---------------------------|--------------|
| With Appreciation | Without Appreciation | With Appreciation | Without Appreciation | Per Farm | Per Operator |
| (3) | (3) | (3) | (3) | (3) | (3) |
| \$231,926 | \$190,057 | \$230,419 | \$188,587 | \$130,403 | \$96,579 |
| 91,230 | 81,401 | 89,849 | 79,191 | 47,621 | 31,927 |
| 66,354 | 56,580 | 61,893 | 52,316 | 29,650 | 21,508 |
| 50,670 | 44,618 | 47,120 | 40,525 | 20,689 | 15,542 |
| 42,626 | 34,580 | 38,335 | 31,926 | 14,330 | 10,878 |
| ----- | | | | | |
| 33,267 | 28,118 | 29,721 | 24,485 | 7,592 | 6,034 |
| 25,805 | 20,654 | 21,927 | 16,616 | 1,361 | 1,060 |
| 19,089 | 13,852 | 14,945 | 10,124 | -5,365 | -4,331 |
| 11,588 | 6,798 | 6,513 | 1,732 | -15,640 | -13,572 |
| -11,058 | -9,971 | -14,637 | -14,241 | -34,015 | -30,508 |

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are shown on pages 25-28.

Financial Analysis Chart

The farm financial analysis chart on page 22 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, 9, 11, and 17 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

FINANCIAL ANALYSIS CHART
395 New York Dairy Farms, 1990

| <u>Liquidity (repayment)</u> | | | | |
|------------------------------|--|--------------------------------|--|-----------------|
| Debt Payments Per Cow | Available for Debt Service Per Cow | Cash Flow Coverage Ratio | Debt Payments as Percent of Milk Sales | Debt Per Cow |
| (7)* | (11) | (7) | (7) | (5) |
| \$ 59 | \$932 | 5.22 | 4% | \$ 119 |
| 181 | 742 | 2.11 | 8 | 680 |
| 253 | 663 | 1.59 | 11 | 1,210 |
| 341 | 582 | 1.30 | 14 | 1,632 |
| 400 | 513 | 1.15 | 16 | 2,025 |
| 454 | 452 | 1.01 | 18 | 2,386 |
| 501 | 395 | 0.85 | 20 | 2,735 |
| 560 | 315 | 0.69 | 22 | 3,178 |
| 642 | 207 | 0.43 | 25 | 3,737 |
| 899 | -196 | -0.23 | 37 | 4,726 |

| <u>Solvency</u> | | | | <u>Profitability</u> | |
|---------------------|-------------------|---------------------------|--------------|---|---------------|
| Leverage Ratio** | Percent Equity | <u>Debt/Asset Ratio</u> | | <u>Percent Rate of Return with appreciation on:</u> | |
| | | Current & Intermediate | Long Term | Equity | Investment*** |
| | (5) | (5) | (5) | (3) | (3) |
| 0.02 | 98 | 0.01 | 0.00 | 21% | 16% |
| 0.11 | 90 | 0.06 | 0.00 | 11 | 10 |
| 0.21 | 82 | 0.12 | 0.07 | 8 | 8 |
| 0.33 | 75 | 0.19 | 0.18 | 5 | 6 |
| 0.43 | 69 | 0.25 | 0.27 | 3 | 5 |
| 0.55 | 64 | 0.31 | 0.39 | 1 | 4 |
| 0.72 | 58 | 0.37 | 0.50 | -1 | 3 |
| 0.93 | 51 | 0.44 | 0.61 | -3 | 1 |
| 1.22 | 45 | 0.53 | 0.74 | -7 | -2 |
| 2.40 | 32 | 0.73 | 1.00 | -23 | -7 |

| <u>Efficiency (Capital)</u> | | | | |
|--------------------------------|--------------------------------------|------------------------------------|---------------------------------|--|
| Capital Turnover (years) | Real Estate Investment Per Cow | Machinery Investment Per Cow | Total Farm Assets Per Cow | Change in Net Worth w/Appreciation |
| (10) | (10) | (10) | (10) | (5) |
| 1.38 | \$1,390 | \$ 596 | \$ 4,264 | \$110,353 |
| 1.68 | 1,972 | 817 | 5,087 | 53,680 |
| 1.84 | 2,262 | 940 | 5,667 | 33,094 |
| 2.03 | 2,594 | 1,050 | 6,103 | 22,571 |
| 2.18 | 2,865 | 1,194 | 6,482 | 15,798 |
| 2.34 | 3,125 | 1,318 | 6,869 | 10,557 |
| 2.50 | 3,504 | 1,472 | 7,340 | 3,939 |
| 2.70 | 4,037 | 1,658 | 7,990 | -3,080 |
| 3.08 | 4,705 | 1,946 | 8,937 | -11,458 |
| 4.27 | 6,762 | 2,646 | 11,419 | -47,167 |

*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.

Comparisons 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 used has as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the 1990 State Summary* have been divided into those with freestall and those with conventional housing. Within each group is a further classification by size of the dairy herd.

The table on page 24 shows the average values for the resulting four groups of dairy farms. Within each housing type, the larger herd size has the highest crop yields and pounds of milk sold per cow. The total cost of producing milk was lower on the larger farms and labor efficiency greater. Profitability was also greater on the larger farms within each housing type.

Farm business charts have been computed for each of the four housing and herd size categories. References to DFBS output page numbers for participating dairy farmers are provided in the table headings. From these charts on pages 25-28, the range in size of business, rates of production, labor efficiency, value and cost of producing milk, and profitability can be observed. The range in every category of business performance is tremendous.

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. Farm managers should remember, however, that their competition is not limited to the other farms in their own barn type and herd size category. They should observe how their management performance compares with farms in other categories as well.

Herd Size Comparisons

A detailed comparison of profitability, financial situation, and business analysis factors across herd sizes is contained on pages 36-43 of the 1990 State Summary*. As herd size increases, the average profitability also increases (pages 36-37). Net farm income without appreciation was \$227,064 per farm for the 300 or more herd size group and \$10,520 per farm for those with less than 40 cows. 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 38-41), but percent equity and debt/asset ratios do not show a significant variation between size groups. Debt payments per cow were lowest for the moderate size herd groups and they demonstrated a strong ability to make debt payments.

Crop yields generally increased as herd size increased, but fertilizer and lime expenses, and machinery cost per tillable acre also increased (pages 42-43). Milk sold per cow increased as herd size increased, ranging from 15,372 pounds on the farms with less than 40 cows to 19,199 pounds on farms with 300 or more cows. Farm capital per worker generally increased, and farm capital per cow decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 304,000 pounds at the lowest herd size category up to 872,000 pounds at the largest size category.

*Smith, Stuart F., Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Management Business Summary, New York, 1990, Department of Agricultural Economics, Cornell University, A.E. Res. 91-5, August 1991.

**SELECTED BUSINESS FACTORS BY TYPE OF BARN
AND HERD SIZE**

364 New York Dairy Farms, 1990

| Item | Farms with: | | Freestall | |
|---|--------------|-----------|-----------|-----------|
| | Conventional | | ≤120 Cows | >120 Cows |
| | ≤60 Cows | >60 Cows | | |
| Number of farms | 127 | 97 | 60 | 80 |
| <u>Cropping Program Analysis</u> | | | | |
| Total Tillable acres | 162 | 287 | 287 | 647 |
| Tillable acres rented* | 50 | 105 | 115 | 249 |
| Hay crop acres* | 105 | 168 | 156 | 258 |
| Corn silage acres* | 28 | 57 | 65 | 213 |
| Hay crop, tons DM/acre | 2.3 | 2.6 | 2.5 | 2.9 |
| Corn silage, tons/acre | 13.2 | 14.2 | 15.3 | 14.5 |
| Oats, bushels/acre | 55.8 | 58.1 | 61.4 | 57.2 |
| Forage DM per cow, tons | 7.9 | 8.2 | 8.6 | 7.3 |
| Tillable acres/cow | 3.5 | 3.3 | 3.4 | 2.7 |
| Fert. & lime exp./til. acre | \$19.38 | \$27.87 | \$25.81 | \$33.56 |
| Total machinery costs | \$22,362 | \$42,595 | \$44,486 | \$113,711 |
| Machinery cost/tillable acre | \$138 | \$148 | \$155 | \$176 |
| <u>Dairy Analysis</u> | | | | |
| Number of cows | 47 | 87 | 85 | 243 |
| Number of heifers | 37 | 73 | 69 | 196 |
| Milk sold, lbs. | 741,903 | 1,461,585 | 1,451,384 | 4,558,311 |
| Milk sold/cow, lbs. | 15,959 | 16,860 | 17,015 | 18,739 |
| Operating cost of prod. milk/cwt. | \$10.62 | \$11.12 | \$11.04 | \$11.22 |
| Total cost of prod. milk/cwt. | \$17.45 | \$16.12 | \$16.13 | \$14.56 |
| Price/cwt. milk sold | \$14.70 | \$14.90 | \$14.95 | \$15.00 |
| Purchased dairy feed/cow | \$693 | \$719 | \$695 | \$813 |
| Purchased dairy feed/cwt. milk | \$4.34 | \$4.27 | \$4.09 | \$4.34 |
| Purc. grain & conc. as % milk rec. | 28% | 28% | 26% | 28% |
| Purc. feed & crop exp./cwt. milk | \$5.13 | \$5.22 | \$5.08 | \$5.28 |
| <u>Capital Efficiency</u> | | | | |
| Farm capital/worker | \$172,643 | \$199,664 | \$204,685 | \$234,105 |
| Farm capital/cow | \$7,444 | \$6,914 | \$6,834 | \$6,066 |
| Farm capital/til. acre owned | \$3,090 | \$3,294 | \$3,389 | \$3,706 |
| Real estate/cow | \$3,790 | \$3,195 | \$3,016 | \$2,660 |
| Machinery investment/cow | \$1,444 | \$1,346 | \$1,463 | \$1,053 |
| Capital turnover, years | 2.58 | 2.33 | 2.29 | 1.81 |
| <u>Labor Efficiency</u> | | | | |
| Worker equivalent | 2.00 | 3.00 | 2.85 | 6.30 |
| Operator/manager equivalent | 1.21 | 1.38 | 1.37 | 1.63 |
| Milk sold/worker, lbs. | 370,048 | 486,820 | 509,605 | 723,398 |
| Cows/worker | 23 | 29 | 30 | 39 |
| Work units/worker | 248 | 309 | 321 | 400 |
| Labor cost/cow | \$589 | \$512 | \$510 | \$550 |
| Labor cost/tillable acre | \$169 | \$155 | \$152 | \$207 |
| <u>Profitability & Balance Sheet Analysis</u> | | | | |
| Net farm income (w/o apprec.) | \$18,620 | \$35,416 | \$35,472 | \$115,054 |
| Labor & mgmt. income/operator | \$2,279 | \$8,017 | \$8,594 | \$39,642 |
| Farm debt/cow | \$2,426 | \$2,093 | \$2,194 | \$2,231 |
| Percent equity | 67% | 70% | 68% | 64% |

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

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
127 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1990

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------------|---------------------------|--------------------------------|---------------------------------------|------------------------------------|--|-------------------------------|---|
| Worker Equiv- alent (10)* | No. of Cows (10) | Pounds Milk Sold (10) | Pounds Milk Sold Per Cow (9) | Tons Hay Crop DM/Acre (8) | Tons Corn Silage Per Acre (8) | Cows Per Worker (10) | Pounds Milk Sold Per Worker (10) |
| 3.2 | 59 | 1,063,570 | 19,694 | 3.9 | 20 | 38 | 601,872 |
| 2.6 | 57 | 956,623 | 18,135 | 3.2 | 17 | 30 | 514,801 |
| 2.4 | 54 | 886,369 | 17,515 | 3.0 | 16 | 28 | 465,011 |
| 2.1 | 51 | 821,538 | 17,016 | 2.7 | 15 | 26 | 431,581 |
| 2.0 | 49 | 757,836 | 16,617 | 2.5 | 13 | 25 | 394,554 |
| ----- | | | | | | | |
| 1.9 | 45 | 707,062 | 16,066 | 2.3 | 12 | 23 | 368,897 |
| 1.7 | 42 | 658,951 | 15,340 | 2.0 | 12 | 22 | 341,474 |
| 1.5 | 40 | 608,772 | 14,202 | 1.8 | 10 | 20 | 298,433 |
| 1.3 | 36 | 536,080 | 13,081 | 1.6 | 10 | 18 | 260,744 |
| 1.1 | 28 | 367,339 | 10,584 | 1.0 | 7 | 14 | 196,088 |

Cost Control

| Grain Bought Per Cow (9) | % Grain is of Milk Receipts (9) | Machinery Costs Per Cow (10) | Labor & Machinery Costs Per Cow (10) | Feed & Crop Expenses Per Cow (9) | Feed & Crop Expenses Per Cwt. Milk (9) |
|-----------------------------------|--|---------------------------------------|---|---|---|
| \$ 360 | 16% | \$221 | \$ 683 | \$ 475 | \$3.42 |
| 476 | 22 | 317 | 829 | 608 | 4.11 |
| 527 | 24 | 359 | 917 | 684 | 4.45 |
| 577 | 26 | 391 | 962 | 722 | 4.71 |
| 632 | 28 | 455 | 1,022 | 762 | 4.92 |
| ----- | | | | | |
| 698 | 29 | 490 | 1,077 | 817 | 5.17 |
| 737 | 31 | 516 | 1,138 | 873 | 5.38 |
| 781 | 33 | 556 | 1,219 | 934 | 5.72 |
| 827 | 37 | 619 | 1,320 | 1,013 | 6.19 |
| 1,007 | 41 | 848 | 1,596 | 1,247 | 7.23 |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------------|---------------------------------------|---|---|---------------------------|---|--|
| Milk Receipts Per Cow (9) | Oper. Cost Milk Per Cwt. (9) | Total Cost Production Per Cwt. (9) | Net Farm Income With Apprec. (3) | Without Apprec. (3) | Labor & Mgmt. Inc. Per Oper. (3) | Change in Net Worth w/Apprec. (5) |
| \$2,982 | \$ 6.69 | \$13.63 | \$72,739 | \$48,969 | \$25,562 | \$42,873 |
| 2,729 | 8.42 | 14.78 | 44,695 | 35,933 | 17,760 | 22,785 |
| 2,604 | 9.10 | 15.38 | 36,555 | 29,744 | 13,303 | 16,110 |
| 2,490 | 9.60 | 16.04 | 29,556 | 25,100 | 8,783 | 12,312 |
| 2,408 | 10.10 | 16.81 | 25,909 | 19,976 | 4,369 | 6,962 |
| ----- | | | | | | |
| 2,337 | 10.77 | 17.50 | 21,881 | 15,365 | 339 | 3,309 |
| 2,224 | 11.45 | 18.18 | 17,294 | 10,762 | -2,731 | 247 |
| 2,073 | 11.98 | 19.28 | 12,480 | 6,635 | -7,250 | -4,426 |
| 1,877 | 12.74 | 20.39 | 5,188 | 2,872 | -16,427 | -11,086 |
| 1,522 | 15.51 | 26.07 | -14,724 | -12,754 | -32,617 | -36,059 |

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

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
 97 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1990

| 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 |
| (10)* | (10) | (10) | (9) | (8) | (8) | (10) | (10) |
| 5.1 | 149 | 2,584,859 | 20,718 | 4.3 | 20 | 44 | 760,541 |
| 4.0 | 106 | 1,875,410 | 19,377 | 3.5 | 18 | 37 | 637,992 |
| 3.4 | 96 | 1,629,899 | 18,581 | 3.1 | 17 | 33 | 576,615 |
| 3.1 | 86 | 1,517,394 | 18,068 | 2.9 | 16 | 31 | 541,546 |
| 2.9 | 80 | 1,403,263 | 17,315 | 2.6 | 15 | 30 | 486,292 |
| ----- | | | | | | | |
| 2.6 | 76 | 1,328,227 | 16,794 | 2.4 | 14 | 28 | 456,646 |
| 2.5 | 71 | 1,219,172 | 16,108 | 2.2 | 12 | 26 | 426,507 |
| 2.4 | 68 | 1,101,764 | 14,940 | 2.1 | 12 | 25 | 404,925 |
| 2.1 | 66 | 988,499 | 13,591 | 1.8 | 11 | 23 | 375,631 |
| 1.7 | 63 | 819,905 | 11,401 | 1.5 | 8 | 19 | 297,511 |

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 |
|----------------------|-----------------------------|-------------------------|---------------------------------|------------------------------|------------------------------------|
| (9) | (9) | (10) | (10) | (9) | (9) |
| \$ 373 | 16% | \$298 | \$ 720 | \$ 493 | \$3.38 |
| 442 | 19 | 368 | 812 | 598 | 4.08 |
| 506 | 23 | 393 | 864 | 695 | 4.39 |
| 579 | 24 | 421 | 913 | 759 | 4.69 |
| 649 | 26 | 456 | 954 | 826 | 4.89 |
| ----- | | | | | |
| 700 | 28 | 485 | 994 | 886 | 5.24 |
| 774 | 31 | 531 | 1,079 | 936 | 5.43 |
| 842 | 33 | 585 | 1,137 | 1,011 | 5.72 |
| 919 | 35 | 640 | 1,216 | 1,087 | 6.14 |
| 1,086 | 40 | 742 | 1,362 | 1,279 | 7.14 |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--------------------------|--------------------------------|------------------------------|---------------------------------|-------------------------|-------------------------------|
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income With Apprec. | Net Farm Income Without Apprec. | Labor & Mgmt. Per Oper. | Change in Net Worth w/Apprec. |
| (9) | (9) | (9) | (3) | (3) | (3) | (5) |
| \$3,162 | \$ 7.30 | \$13.04 | \$106,960 | \$91,167 | \$46,704 | \$77,975 |
| 2,902 | 9.22 | 14.11 | 72,165 | 61,082 | 27,104 | 39,645 |
| 2,744 | 9.91 | 14.94 | 54,447 | 49,457 | 19,419 | 29,725 |
| 2,651 | 10.20 | 15.55 | 48,672 | 43,537 | 13,118 | 23,556 |
| 2,576 | 10.59 | 15.93 | 43,293 | 34,340 | 9,424 | 17,338 |
| ----- | | | | | | |
| 2,478 | 11.13 | 16.38 | 36,204 | 27,752 | 4,553 | 12,420 |
| 2,362 | 11.69 | 16.82 | 25,594 | 21,420 | 380 | 5,334 |
| 2,205 | 12.34 | 17.30 | 18,611 | 14,713 | -5,082 | -2,665 |
| 2,025 | 13.24 | 18.04 | 12,273 | 9,758 | -13,809 | -11,179 |
| 1,730 | 14.19 | 20.13 | -4,728 | -5,646 | -23,429 | -47,564 |

*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 120 or Less Cows, New York, 1990

| 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 |
| (10)* | (10) | (10) | (9) | (8) | (8) | (10) | (10) |
| 4.3 | 116 | 2,158,034 | 20,788 | 4.6 | 21 | 48 | 828,578 |
| 3.8 | 109 | 1,944,413 | 19,249 | 3.6 | 19 | 40 | 676,371 |
| 3.5 | 103 | 1,846,013 | 18,571 | 3.3 | 17 | 36 | 605,256 |
| 3.1 | 97 | 1,696,622 | 17,923 | 3.0 | 16 | 33 | 578,887 |
| 2.9 | 90 | 1,536,651 | 17,237 | 2.8 | 15 | 31 | 547,092 |
| ----- | | | | | | | |
| 2.7 | 80 | 1,343,093 | 16,615 | 2.5 | 15 | 29 | 501,972 |
| 2.5 | 77 | 1,213,815 | 16,147 | 2.1 | 14 | 27 | 456,111 |
| 2.2 | 67 | 1,049,918 | 15,476 | 1.9 | 14 | 25 | 410,748 |
| 1.9 | 56 | 881,600 | 13,672 | 1.6 | 13 | 23 | 354,502 |
| 1.4 | 46 | 632,120 | 12,126 | 1.0 | 9 | 18 | 253,915 |

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 |
|----------------------------|-----------------------------------|-------------------------------|---------------------------------------|------------------------------------|--|
| (9) | (9) | (10) | (10) | (9) | (9) |
| \$ 286 | 11% | \$270 | \$ 653 | \$ 512 | \$3.01 |
| 426 | 18 | 331 | 802 | 620 | 3.77 |
| 520 | 21 | 393 | 885 | 665 | 4.40 |
| 606 | 25 | 440 | 933 | 767 | 4.76 |
| 666 | 27 | 464 | 970 | 838 | 5.12 |
| ----- | | | | | |
| 704 | 28 | 496 | 1,046 | 921 | 5.52 |
| 764 | 31 | 567 | 1,092 | 969 | 5.65 |
| 840 | 33 | 614 | 1,153 | 1,041 | 5.85 |
| 906 | 34 | 686 | 1,267 | 1,091 | 6.34 |
| 1,006 | 39 | 877 | 1,481 | 1,219 | 7.12 |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--------------------------------|--------------------------------------|-----------------|--------------------|------------------------------------|-------------------------------------|
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
| (9) | (9) | (9) | With Apprec. | Without Apprec. | (3) | (5) |
| \$1,854 | \$ 7.95 | \$12.98 | \$101,819 | \$96,206 | \$44,877 | \$75,638 |
| 2,012 | 9.22 | 14.11 | 79,708 | 70,840 | 27,364 | 48,824 |
| 2,295 | 9.65 | 14.91 | 69,020 | 56,741 | 19,085 | 33,368 |
| 2,435 | 10.09 | 15.41 | 59,252 | 48,026 | 13,408 | 23,325 |
| 2,509 | 10.72 | 15.85 | 41,880 | 36,075 | 10,018 | 15,763 |
| ----- | | | | | | |
| 2,588 | 11.21 | 16.19 | 31,702 | 27,444 | 6,031 | 10,534 |
| 2,667 | 11.78 | 16.95 | 23,015 | 15,348 | 433 | 1,011 |
| 2,759 | 12.71 | 17.81 | 16,564 | 10,333 | -9,174 | -7,476 |
| 2,898 | 13.84 | 19.65 | 5,105 | -2,985 | -18,460 | -19,705 |
| 3,100 | 15.22 | 22.15 | -18,572 | -12,043 | -26,264 | -77,443 |

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

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
80 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1990

| 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 |
| (10)* | (10) | (10) | (9) | (8) | (8) | (10) | (10) |
| 14.7 | 665 | 12,936,108 | 21,844 | 4.7 | 19 | 57 | 1,002,686 |
| 7.9 | 338 | 6,399,112 | 20,930 | 4.0 | 18 | 44 | 866,986 |
| 7.0 | 257 | 4,683,440 | 20,025 | 3.5 | 17 | 42 | 793,600 |
| 6.0 | 205 | 3,760,735 | 19,243 | 3.2 | 16 | 40 | 734,560 |
| 5.5 | 181 | 3,413,110 | 18,723 | 3.0 | 16 | 38 | 694,646 |
| ----- | | | | | | | |
| 5.1 | 169 | 3,070,859 | 18,168 | 2.8 | 15 | 36 | 659,232 |
| 4.5 | 156 | 2,884,946 | 17,731 | 2.6 | 14 | 34 | 627,685 |
| 4.0 | 142 | 2,714,383 | 17,106 | 2.3 | 13 | 32 | 587,006 |
| 3.8 | 130 | 2,432,639 | 16,404 | 2.1 | 12 | 30 | 530,645 |
| 3.1 | 122 | 1,908,456 | 14,467 | 1.5 | 9 | 25 | 428,608 |

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 |
|----------------------|-----------------------------|-------------------------|---------------------------------|------------------------------|------------------------------------|
| (9) | (9) | (10) | (10) | (9) | (9) |
| \$ 416 | 15% | \$287 | \$ 670 | \$ 655 | \$3.48 |
| 550 | 19 | 368 | 839 | 785 | 4.17 |
| 632 | 23 | 405 | 919 | 829 | 4.50 |
| 689 | 25 | 441 | 975 | 888 | 4.84 |
| 738 | 26 | 480 | 1,025 | 941 | 5.10 |
| ----- | | | | | |
| 783 | 29 | 506 | 1,054 | 979 | 5.44 |
| 826 | 30 | 535 | 1,089 | 1,019 | 5.64 |
| 857 | 32 | 555 | 1,162 | 1,085 | 6.01 |
| 926 | 34 | 609 | 1,217 | 1,160 | 6.32 |
| 1,078 | 40 | 748 | 1,354 | 1,293 | 7.01 |

| Value and Cost of Production | | | Profitability | | | |
|------------------------------|--------------------------|--------------------------------|------------------------------|---------------------------------|------------------------------|-------------------------------|
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income With Apprec. | Net Farm Income Without Apprec. | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. |
| (9) | (9) | (9) | (3) | (3) | (3) | (5) |
| \$3,303 | \$ 6.85 | \$11.75 | \$420,314 | \$341,186 | \$207,822 | \$187,516 |
| 3,107 | 9.20 | 13.08 | 237,008 | 196,670 | 89,608 | 102,826 |
| 3,016 | 10.18 | 13.77 | 165,693 | 153,705 | 61,282 | 80,200 |
| 2,927 | 10.75 | 14.20 | 127,779 | 111,389 | 42,376 | 65,041 |
| 2,843 | 11.14 | 14.82 | 104,366 | 92,999 | 31,694 | 46,573 |
| ----- | | | | | | |
| 2,713 | 11.44 | 15.22 | 85,705 | 74,817 | 20,966 | 35,148 |
| 2,644 | 11.90 | 15.61 | 71,032 | 58,137 | 15,068 | 21,132 |
| 2,548 | 12.42 | 15.94 | 50,070 | 43,367 | 7,425 | 1,876 |
| 2,443 | 13.04 | 16.51 | 35,473 | 31,356 | -5,216 | -14,390 |
| 2,169 | 14.07 | 17.72 | -1,111 | 9,388 | -35,772 | -58,492 |

*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 the short term. Goal setting is as important on a dairy farm as it is in other businesses. Written goals are a tool which farm operators can use to ensure that the business continues to move in the proper direction.

1. Goals should be specific.
2. Goals should be realistic and achievable.
3. The achievement of the goal should be verifiable.
4. You should designate a time when each goal will be achieved.

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

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

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

- a. Begin with a general philosophy statement which incorporates both business and family goals.
- b. Identify 4-6 long range goals.
- c. Identify specific short range goals for a given time period (i.e., one year).

Worksheet for Setting Goals

I. General Philosophy and Objectives

Worksheet for Setting Goals (continued)

II. Long Range Goals (require two or more years to achieve)

III. Short Range Goals (possible to achieve in one or two years)

| What | How | When |
|------|-----|------|
| | | |
| | | |
| | | |
| | | |
| | | |

NOTE: Once long and short range goals have been identified, it is helpful to rank them in order of priority.

Prepared by T.R. Maloney, Extension Associate, Cornell University

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Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 19-22 and 25-28 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: _____ Need 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 10)
- Appreciation - (defined on page 5)
- Balance Sheet - A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.
- Capital Efficiency - The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital.
- Capital Turnover, Years - The number of years required for total farm income to equal total farm assets, calculated by dividing average total farm assets by total accrual operating receipts plus appreciation.
- 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 11)
- 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)
- Dairy (farm) - A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.
- Dairy Cash-Crop (farm) - Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed 10 percent of accrual milk receipts.
- Debt Per Cow - Total end-of-year debt divided by end-of-year number of cows.
- Debt to Asset Ratios - (defined on page 9)

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

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

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

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

Farm Debt Payments Per Cow - Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart.

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

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

Labor and Management Income - (defined on page 6)

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

Labor Efficiency - Production capacity and output per worker.

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

Net Farm Income - (defined on page 5)

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

Operating Costs of Producing Milk - (defined on page 16)

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

Other Livestock Expenses - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

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

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

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

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

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

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

Return on Equity Capital - (defined on page 7)

Return on Total Capital - (defined on page 7)

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

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

Total Costs of Producing Milk - (defined on page 16)

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

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