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COMPARISON OF FARM BUSINESSES OF REGISTERED AND GRADE HERDS New York, 1977

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Foreword

This publication is part of a study supported by a special temporary grant to the Agricultural Experiment Station at Cornell University by Agway Inc. of Syracuse, New York.

Dairy management practices are one area of factors that affect dairy farm incomes. Economic data on these practices are limited. Data available from the dairy herd improvement records and the New York farm business management projects were merged so as to make it possible to study the effects of dairy management practices on farm incomes in 1977.

The dairy herd improvement records classify the herds as either registered or grade. Since questions are often asked concerning the economics of maintaining a registered herd, it was decided to study these two groups for 1977. James Lamkey did the statistical work under the supervision of C. A. Bratton, professor of farm management.

This study provides economic data on registered and grade herds which can be used in determining policy recommendations in New York State; by individual farmers to compare their performance with the norm; and for showing basic relationships of dairy management practices to income per operator and related business factors.

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COMPARISON OF FARM BUSINESSES
OF REGISTERED AND GRADE HERDS
New York, 1977

C. A. Bratton

Introduction

The Situation

A herd management practice of interest to dairy farmers is that of registered versus grade herds. Farmers often ask if it pays to maintain a registered herd. One approach used to answer management questions of this kind is to observe the experiences of farmers. We can observe the relative profitableness of farms with registered herds and those with grade herds. An analysis of the businesses also shows where and how the two types of herds may differ.

Since 1974 DHI information, when available, has been merged with the farm business financial data of the cooperators in the dairy farm business management projects. This makes it possible to study the effects of dairy herd management practices on the income from the business. For 1977, there were 363 farms for which both DHI and farm business financial data were available.

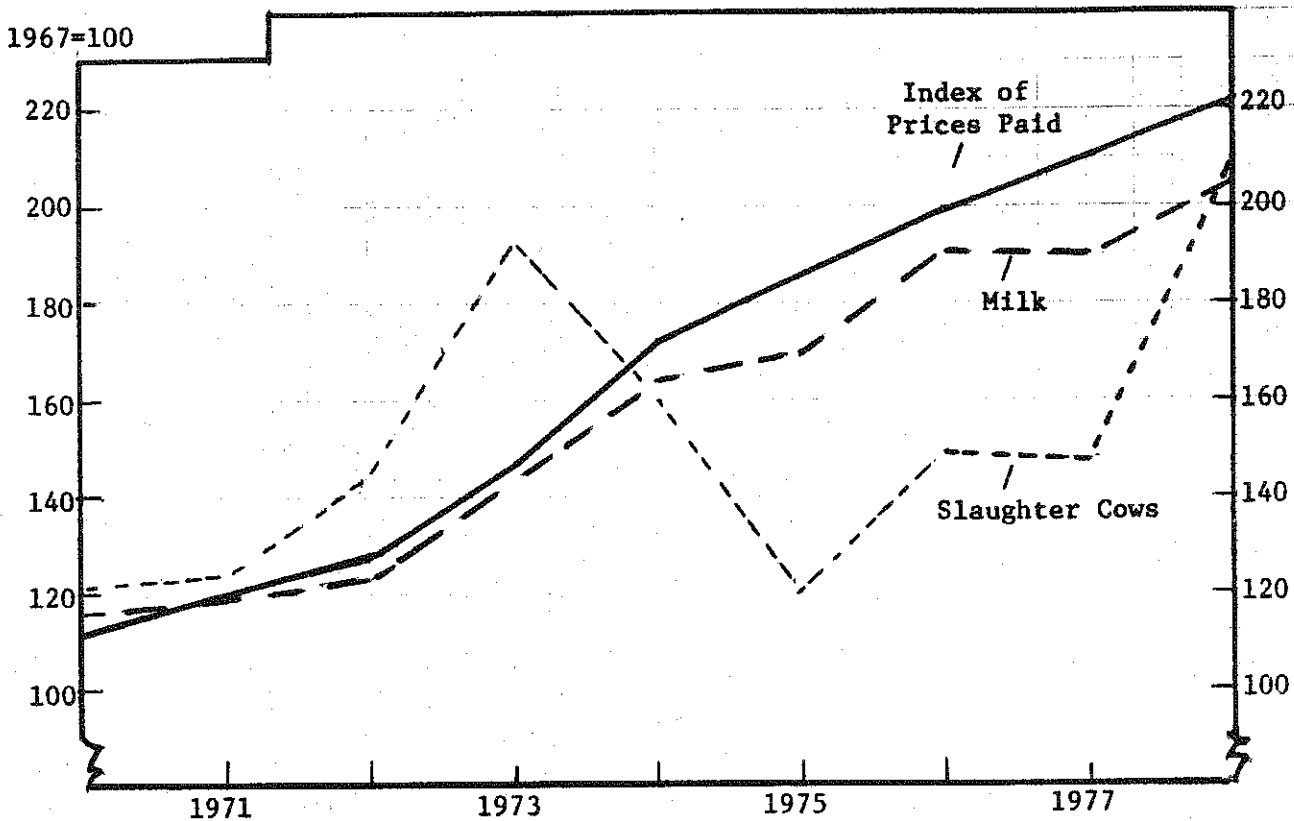
Dairy herd improvement records classify the herds as registered or grades. Some herds have both registered and grade animals but they are classified according to which predominates. The 363 farms on which combined data were available were sorted on the basis of registered or grade herds and averages for each were computed. The results are presented in the same format as that used in the annual farm business summary reports.

Study Procedures

A computer listing was made of the farm business summary cooperators who indicated they had dairy herd improvement records. Then the dairy herd improvement identification numbers for these farms were obtained from the Animal Science Department. Farms (DHI) with less than 365 days of records, milk only records, or "high-medium-low" feeding records were discarded for study purposes.

Once farms from the two sources were definitely identified and matched, the DHI information selected for analysis was merged with the farm business summary information. A computer program sorted the data into various groupings, and average values for all factors in each group were printed out. Comparative data for the registered and grade herds were put in cross tabulation tables and are reported in this publication.

PRICES RECEIVED AND PAID BY N.Y. DAIRY FARMERS, 1970-1977



SOURCE: USDA - Agricultural Prices

The general level of farm incomes is determined by the relationship of prices paid to prices received by farmers. The graph above shows the relationship improved in 1978 but it is still not as favorable as in 1970 through 1973. The table below contains some of the important prices for the last ten years. Prices paid by New York dairy farmers are up 106 percent in the last ten years while the milk prices have increased only 83 percent.

PRICES RECEIVED AND PAID BY NEW YORK DAIRY FARMERS, 1969-1978

| Year | Milk 3.5% B.F. (cwt.) | Slaughter Cows (cwt.) | Dairy Feed 16% Prot. (ton) | Gasoline Bulk Delv. Reg. (gal.) | Ferti- lizer 10-20-20 (ton) | Index Prices Paid NY D. Farmers (1967=100) |
|------|--------------------------------|-----------------------------|-------------------------------------|--|--------------------------------------|---|
| 1969 | \$5.66 | \$19.30 | \$ 72 | \$.33 | \$ 87 | 107 |
| 1970 | 5.89 | 20.70 | 77 | .33 | 89 | 112 |
| 1971 | 6.02 | 21.20 | 81 | .34 | 93 | 120 |
| 1972 | 6.25 | 24.48 | 83 | .34 | 94 | 126 |
| 1973 | 7.30 | 32.80 | 115 | .37 | 103 | 146 |
| 1974 | 8.24 | 27.40 | 138 | .51 | 160 | 172 |
| 1975 | 8.64 | 20.60 | 132 | .54 | 175 | 186 |
| 1976 | 9.71 | 25.57 | 139 | .57 | 158 | 200 |
| 1977 | 9.61 | 25.09 | 139 | .61 | 155 | 210 |
| 1978 | 10.38 | 35.58 | 137 | .64 est. | 157 est. | 221 |

Summary of Farm Businesses

Business Characteristics

A knowledge of the farm resources used and the business characteristics is important in evaluating management performance. The table below shows important farm business characteristics, the number of farms reporting these characteristics, and the average use of labor and land resources for the two groups of farms being studied.

Table 1. BUSINESS CHARACTERISTICS OF REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| <u>Number of farms reporting</u> | | | | | |
|------------------------------------|-------------------|--------------|-------------------------|-------------------|--------------|
| <u>Type of Business</u> | <u>Registered</u> | <u>Grade</u> | <u>Business Records</u> | <u>Registered</u> | <u>Grade</u> |
| Individual | 99 | 196 | Account Book | 49 | 108 |
| Partnership | 20 | 41 | Agrifax | 18 | 46 |
| Corporation | 4 | 3 | CAMIS | 37 | 50 |
| <u>Barn Type</u> | | | Agway | 4 | 13 |
| Stanchion | 86 | 148 | Farm Bureau | 4 | 5 |
| Free Stall | 36 | 90 | Other | 11 | 18 |
| Other | 1 | 2 | <u>Dairy Records</u> | | |
| <u>Milking System</u> | | | D.H.I.C. | 116 | 189 |
| Bucket & Carry | 2 | 3 | Owner Sampler | 7 | 51 |
| Dumping Station | 29 | 76 | | | |
| Pipeline | 62 | 80 | | | |
| Herringbone | 26 | 70 | | | |
| Other Parlor | 4 | 11 | | | |
| <u>Averages of farms reporting</u> | | | | | |
| <u>Labor Force</u> | <u>Registered</u> | <u>Grade</u> | <u>Land Used</u> | <u>Registered</u> | <u>Grade</u> |
| Operator(s) | 15 mo. | 14 mo. | Total acres: | | |
| Family paid | 3 mo. | 3 mo. | Owned | 286 | 306 |
| Family unpaid | 3 mo. | 3 mo. | Rented | 84 | 95 |
| Hired | 8 mo. | 9 mo. | Crop acres: | | |
| Total months | 29 mo. | 29 mo. | Rented | 66 | 71 |
| | | | Total | 202 | 216 |
| <u>Operators</u> | 152 | 290 | <u>Number of Cows</u> | | |
| Age | 43 yrs. | 42 yrs. | Beg. of year | 66 | 71 |
| Est. value labor and management | \$11,600 | \$12,100 | End of year | 67 | 72 |
| | | | Av. for year | 66 | 70 |

There were nearly twice as many grade as registered herds in this group of 363 farms. A study of the business characteristics shows some interesting comparisons.

The average labor force was the same (29 months) for both registered and grade herds but the grade herds averaged four more cows per farm than the registered (66 vs. 70). A larger proportion of the grade herds than of the registered herds had free stall barns (38% vs. 29%). For the dairy records, only 6% of the registered herds used owner sampler compared with 21% of the grade herds.

Table 2. FARM INVENTORY VALUES BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | | Grade | |
|-----------------------|------------|-----------|-----------|-----------|
| | 1/1/77 | 1/1/78 | 1/1/77 | 1/1/78 |
| Livestock | \$ 58,459 | \$ 62,010 | \$ 50,934 | \$ 54,039 |
| Feed & supplies | 20,917 | 21,051 | 20,488 | 20,949 |
| Machinery & equipment | 50,070 | 55,290 | 50,595 | 55,367 |
| Land & buildings | 134,912 | 144,638 | 142,447 | 152,919 |
| TOTAL | \$264,358 | \$282,989 | \$264,464 | \$283,274 |

There was little difference in the total inventory per farm for registered and grade herds both at the beginning and end of the year. In both kinds of herds, the number of cows increased by one (p. 3) and the total inventory increased by 7% during the year.

The total investment per cow was higher for the registered herds than for the grades (\$4,222 vs. \$3,934). This may be explained in part by the difference in average cow numbers for the two groups. The machinery investment per cow for registered herds was \$56 higher than for the grades. Land and buildings were \$34 higher for the registered herds.

The average livestock inventory value per cow was \$925 for the registered herds compared with \$750 for the grade herds. Part of this can be explained by the higher proportion of heifers for the registered herds (81% vs. 73%). However, if it were assumed that average heifer values were one-half that of cows, the average values of cows would be \$660 for the registered, and \$550 for the grades.

The major difference in inventory values is in the value per animal. The registered herds valued their cows at about \$100 more per head than the grade herds. It is reasonable to expect the average values of cows and heifers to be higher for registered herds than for grade herds.

Table 3. INVESTMENT PER COW BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | January 1, 1978 | |
|--------------------------------------|-----------------|---------|
| | Registered | Grade |
| Number of farms | 123 | 240 |
| Number of cows (1/1/78) | 67 | 72 |
| % av. no. heifers is of av. no. cows | 81% | 73% |
| <u>Inventory Value Per Cow for:</u> | | |
| Livestock | \$925 | \$750 |
| Feed & supplies | 314 | 291 |
| Machinery | 825 | 769 |
| Land & buildings | 2,158 | 2,124 |
| TOTAL | \$4,222 | \$3,934 |

Machinery and Real Estate Inventory Calculations

Capital outlays for machinery and buildings usually occur in large uneven amounts but assets depreciate gradually over a period of time. Machinery depreciation as calculated below averaged 9% and 10% for the two kinds of herds.

Table 4. MACHINERY & EQUIPMENT DEPRECIATION BY REGISTERED & GRADE HERDS
363 New York Dairy Farms, 1977

| Item | 123 Registered Herds | 240 Grade Herds |
|--------------------------|----------------------|-----------------|
| Beginning Inventory | \$50,070 | \$50,595 |
| Machinery Purchases | <u>11,093</u> | <u>10,865</u> |
| Total (1) | \$61,163 | \$61,460 |
| End of Year Inventory | \$55,290 | \$55,367 |
| Machinery Sold | <u>262</u> | <u>174</u> |
| Total (2) | <u>55,552</u> | <u>55,541</u> |
| DEPRECIATION (1 minus 2) | \$ 5,611 | \$ 5,919 |
| Percent Depreciation | 9% | 10% |

Lost Capital is the difference between the cost of new buildings and the amount these improvements add to the value of the farm. It is not included in the farm expenses since building depreciation is based on the full cost of new buildings and will account for lost capital over the life of the building. Building depreciation was taken from the farm depreciation schedule and is included as a farm expense. Real Estate appreciation was estimated by each farm operator and averaged 2.6% and 3.0% on these two kinds of farms in 1977.

Table 5. REAL ESTATE INVENTORY CALCULATIONS FOR REGISTERED & GRADE HERDS
363 New York Dairy Farms, 1977

| Item | 123 Registered Herds | 240 Grade Herds |
|---------------------------------------|----------------------|------------------|
| Beginning Market Value | \$134,912 | \$142,447 |
| Cost of New Real Estate | \$10,540 | \$10,373 |
| Less Lost Capital | <u>-1,699</u> | <u>-1,276</u> |
| Value of New Added | +8,841 | +9,097 |
| Less Building Depreciation | -2,669 | -2,684 |
| Less Real Estate Sold | -9 | -265 |
| Total Without Appreciation | <u>\$141,075</u> | <u>\$148,595</u> |
| Appreciation of Beginning Real Estate | <u>+3,563</u> | <u>+4,324</u> |
| End of Year Market Value | \$144,638 | \$152,919 |

The percent depreciation on machinery was 1% higher for the grade herds than the registered herds (9% vs. 10%). The building depreciation amounts were about the same for the two kinds of herds (\$2,669 vs. \$2,684) but the appreciation rates were slightly higher (2.6% vs. 3.0%) for the grade herds than for the registered herds. These differences are small and probably not significant.

Receipts

The farm receipts for the year show the general nature and size of the business. Below are the sources and average amounts of receipts for these 123 registered herds and 240 grade herds for 1977.

Table 6. FARM RECEIPTS BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | | Grade | |
|--------------------------------|------------|---------|-----------|---------|
| | Amount | Percent | Amount | Percent |
| Milk sales | \$ 91,260 | 89 | \$ 96,538 | 91 |
| Crop sales | 759 | 1 | 815 | 1 |
| Dairy cattle sold | 7,262 | 7 | 5,841 | 6 |
| Calves & other livestock sales | 1,630 | 2 | 1,216 | 1 |
| Gas tax refunds | 147 | -- | 153 | -- |
| Government payments | 377 | -- | 359 | -- |
| Work off farm | 93 | -- | 87 | -- |
| Custom machine work | 87 | -- | 120 | -- |
| Other | 1,081 | 1 | 1,208 | 1 |
| Total Cash Receipts | \$102,696 | 100 | \$106,337 | 100 |
| Increase in livestock | 3,551 | | 3,105 | |
| Increase in feed & supplies | 134 | | 461 | |
| TOTAL FARM RECEIPTS | \$106,381 | | \$109,903 | |

Total cash receipts and total farm receipts were higher for the grade herds than for the registered. This is accounted for by the larger number of cows (70 vs. 66). Receipts from livestock sold, however, was larger for the registered herds and accounted for 9% of the cash receipts compared with 7% for the grade herds. This is probably a significant difference between the two kinds of herds.

The average price received for milk for the registered herds was \$9.78 compared with \$9.74 for the grade herds. The milk sales per cow were about the same. Total cash receipts per man were slightly higher for the grade herds.

Table 7. INCOME ANALYSIS BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade |
|------------------------------|------------|----------|
| Average price/cwt. milk sold | \$9.78 | \$9.74 |
| Milk sales per cow | \$1,383 | \$1,379 |
| Total cash receipts/man | \$42,436 | \$43,941 |

Expenses

Total farm expenses exceeded \$100,000 per farm for both types of herds. For both groups of farms, feed, labor and interest were the three largest cash expense items. Cash interest payments were significantly less on the registered than on the grade farms indicating a difference in debt situation (see p. 10).

Table 8. FARM EXPENSES BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | | Grade | |
|---------------------------------|------------|---------|-----------|---------|
| | Amount | Percent | Amount | Percent |
| Hired labor | \$ 7,331 | 9 | \$ 8,268 | 10 |
| <u>Feed</u> | | | | |
| Dairy concentrate | 26,036 | 33 | 28,605 | 34 |
| Other feed | 1,244 | 2 | 1,315 | 2 |
| <u>Machinery</u> | | | | |
| Machine hire | 804 | 1 | 747 | 1 |
| Machinery repairs | 4,631 | 6 | 4,745 | 6 |
| Auto expense (farm share) | 337 | -- | 342 | -- |
| Gas & oil | 2,939 | 4 | 2,936 | 4 |
| <u>Livestock</u> | | | | |
| Purchased livestock | 2,231 | 3 | 2,602 | 3 |
| Breeding fees | 1,526 | 2 | 1,165 | 1 |
| Veterinary & medicine | 1,832 | 2 | 1,620 | 2 |
| Milk marketing | 2,237 | 3 | 2,384 | 3 |
| Other livestock expense | 3,580 | 5 | 3,442 | 4 |
| <u>Crops</u> | | | | |
| Fertilizer & lime | 4,340 | 6 | 4,960 | 6 |
| Seeds & plants | 1,476 | 2 | 1,512 | 2 |
| Spray, other crop expense | 1,292 | 2 | 1,408 | 2 |
| <u>Real Estate</u> | | | | |
| Land, building, fence repair | 1,730 | 2 | 1,579 | 2 |
| Taxes | 2,552 | 3 | 2,613 | 3 |
| Insurance | 1,767 | 2 | 1,705 | 2 |
| Rent | 1,139 | 1 | 1,285 | 1 |
| <u>Other</u> | | | | |
| Telephone (farm share) | 385 | 1 | 370 | -- |
| Electricity (farm share) | 1,727 | 2 | 1,704 | 2 |
| Interest paid | 5,555 | 7 | 7,491 | 9 |
| Miscellaneous | 1,403 | 2 | 1,058 | 1 |
| Total Cash Expenses | \$ 78,094 | 100 | \$ 83,856 | 100 |
| <u>Noncash Items</u> | | | | |
| Machinery depreciation | \$ 5,611 | | \$ 5,919 | |
| Building depreciation | 2,669 | | 2,684 | |
| Unpaid family labor | 1,200 | | 1,200 | |
| Interest on equity capital @ 7% | 14,252 | | 12,724 | |
| Decrease in feed | -- | | -- | |
| TOTAL FARM EXPENSES | \$101,826 | | \$106,383 | |

Financial Summary of Year's Business

The financial summary of the year's operation reflects the results of management. Researchers have developed a number of ways to measure the returns from a farm business. Four common measures are reported on the next two pages.

Table 9. NET CASH FARM INCOME BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | Average 570 Farms, 1977 |
|----------------------|---------------|---------------|-------------------------|
| Cash Farm Receipts | \$102,696 | \$106,337 | \$104,243 |
| Cash Farm Expenses | <u>78,094</u> | <u>83,856</u> | <u>80,646</u> |
| NET CASH FARM INCOME | \$ 24,602 | \$ 22,481 | \$ 23,597 |

Net cash farm income reflects the amount of cash available from the year's operation of the business for family living and payments on debts. The net cash farm income for the registered herds was \$2,100 larger than for the grade herds, and larger than the average for all 570 farms in the general summary.

Table 10. LABOR AND MANAGEMENT INCOME BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | Average 570 Farms, 1977 |
|----------------------------------|----------------|----------------|-------------------------|
| Total Farm Receipts | \$106,381 | \$109,903 | \$107,395 |
| Total Farm Expenses | <u>101,826</u> | <u>106,383</u> | <u>103,657</u> |
| LABOR & MGT. INCOME | \$ 4,555 | \$ 3,520 | \$ 3,738 |
| Number of Operators | 1.2 | 1.2 | 1.2 |
| LABOR & MGT. INCOME PER OPERATOR | \$ 3,688 | \$ 2,914 | \$ 3,049 |

Labor and management income is the return to the operator for his efforts in operating the business. A 7 percent charge for the use of the operator's equity capital in the business has been included as a farm expense. This interest charge reflects what the operator could have earned from this capital had it been invested elsewhere, such as in bank certificates. Labor and management income is the measure generally used for comparing farm businesses.

The average labor and management income per operator for the registered herds was \$3,688 and for the grade herds \$2,914, or about one-fourth more for the registered herds. The grade herds average labor income was \$135 below the average for all 570 farms in 1977. In brief, the registered herds did pay better in 1977.

Labor, management, and ownership income per operator reflects the combined return to the farmer for his triple role of worker-manager, financier, and owner. The return here provides for the operator's living and his gain in business net worth. Again with this measure, the registered herds had the highest average income.

Table 11. LABOR, MANAGEMENT, AND OWNERSHIP INCOME
BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | Average 570 Farms, 1977 |
|---|---------------|---------------|-------------------------|
| Labor & management income | \$ 4,555 | \$ 3,520 | \$ 3,738 |
| Real estate appreciation | 3,563 | 4,324 | 4,228 |
| Interest on equity capital | <u>14,252</u> | <u>12,724</u> | <u>13,237</u> |
| Total Per Farm | \$22,370 | \$20,568 | \$21,203 |
| Number of operators | 1.2 | 1.2 | 1.2 |
| LABOR, MANAGEMENT AND OWNERSHIP INCOME/OPERATOR | \$18,113 | \$17,026 | \$17,294 |

Return on equity capital is a common measure for nonfarm businesses. It can be computed with or without real estate appreciation. Both measures are shown below. The registered herds had a return of 4.0% on equity capital and the grade herds had a 3.3% return and all 570 farms had a 3.6% return when the appreciation was included. This is a lower return than the charge made in calculating labor and management income.

Table 12. RETURN ON EQUITY CAPITAL BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | Average 570 Farms, 1977 |
|---|---------------|---------------|-------------------------|
| <u>Including Real Estate Appreciation</u> | | | |
| Labor, Mgt. & Ownership Income/Farm | \$22,370 | \$20,568 | \$21,203 |
| Less: Value Operator's Labor & Mgt.* | <u>14,234</u> | <u>14,506</u> | <u>14,292</u> |
| Return on Equity Capital | \$ 8,136 | \$ 6,062 | \$ 6,911 |
| Rate of Return on Equity Capital | 4.0% | 3.3% | 3.6% |
| <u>Excluding Real Estate Appreciation</u> | | | |
| Return on Equity Capital (see above) | \$ 8,136 | \$ 6,062 | \$ 6,911 |
| Less: Real Estate Appreciation | <u>3,563</u> | <u>4,324</u> | <u>4,228</u> |
| Return on Equity Capital | \$ 4,573 | \$ 1,738 | \$ 2,683 |
| Rate of Return on Equity Capital | 2.2% | 0.9% | 1.3% |

*Value of operator's labor and management estimated by operators (pg. 3).

Farm Family Financial Situation

The financial situation is an important part of a farm business summary. It affects the current cash outflow and future capital investment decisions. A farmer may have a good labor income, but a high debt payment schedule may seriously restrict his management possibilities.

Table 13. FARM FAMILY FINANCIAL SITUATION BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, January 1, 1978

| Item | Registered | | Grade | |
|---------------------------------|--------------|----------|--------------|----------|
| | Amount | Percent | Amount | Percent |
| <u>Assets</u> | | | | |
| Livestock | \$ 62,010 | 21 | \$ 54,040 | 18 |
| Feed and supplies | 21,051 | 7 | 20,949 | 7 |
| Machinery and equipment | 55,291 | 19 | 55,367 | 19 |
| Land and buildings | 144,638 | 49 | 152,919 | 52 |
| Co-op investment | 3,691 | 1 | 3,822 | 1 |
| Accounts receivable | 6,154 | 2 | 7,257 | 2 |
| Cash and checking accounts | <u>1,484</u> | <u>1</u> | <u>1,941</u> | <u>1</u> |
| Total Farm Assets | \$294,319 | 100 | \$296,295 | 100 |
| Savings accounts | 3,310 | | 2,961 | |
| Cash value life insurance | 3,470 | | 2,398 | |
| Stocks and bonds | 3,416 | | 1,739 | |
| Nonfarm real estate | 1,974 | | 2,376 | |
| Auto (personal share) | 1,029 | | 806 | |
| All other | <u>3,307</u> | | <u>1,287</u> | |
| Total Nonfarm Assets | \$ 16,506 | | \$ 11,567 | |
| TOTAL ASSETS | \$310,825 | | \$307,862 | |
| <u>Liabilities</u> | | | | |
| Real estate mortgage | \$ 52,707 | 58 | \$ 64,128 | 56 |
| Liens on cattle & equipment | 27,587 | 31 | 39,648 | 35 |
| Installment contracts | 2,741 | 3 | 2,675 | 2 |
| Notes and other farm debt | <u>7,686</u> | <u>8</u> | <u>8,072</u> | <u>7</u> |
| Total Farm Liabilities | \$ 90,721 | 100 | \$114,523 | 100 |
| Nonfarm Liabilities | <u>1,246</u> | | <u>849</u> | |
| TOTAL LIABILITIES | \$ 91,967 | | \$115,372 | |
| Farm Net Worth (equity capital) | \$203,598 | | \$181,772 | |
| Family Net Worth | \$218,858 | | \$192,490 | |

Farm net worth (equity capital) averaged \$203,598 for the registered herds and \$181,772 for the grade herds. Farm Net Worth is Total Farm Assets less Total Farm Liabilities. Family Net Worth is Total Assets less Total Liabilities. The registered herds had about \$24,000 less liabilities than the grade herds, which in turn gave a higher farm net worth. This suggests that the registered herds were in a somewhat better financial position than the grade herds.

Payment Ability is an important consideration in determining how proposed investments should be financed. The farm business must produce enough cash income to meet operating expenses, to cover family or personal living expenses, and to make debt payments. Cash purchases of capital items that normally take place during the year must also be included.

Payment ability is calculated in the table below. Interest paid is added to net cash farm income because planned or budgeted debt payments include interest as well as principal. Family living expenses are estimated to calculate the cash available for debt payment and capital purchases made in cash. There was no significant difference between the two kinds of herds.

Debt Payments Planned for 1978 were the scheduled debt payments as of January 1978. Debt payments per cow were figured on the basis of the average number of cows for the year. The percent debt payments are of milk sales is based on last year's milk sales which may be less than those for the coming year if there has been an expansion in the business. With less debt the commitments for payments were lighter for the registered than the grade herds.

Table 14. FINANCIAL MEASURES AND DEBT COMMITMENT
BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, January 1, 1978

| Item | Registered | Grade | 570 N.Y. Farms |
|--|---------------|---------------|-------------------|
| <u>Payment Ability</u> | | | |
| Net cash farm income (from p. 8) | \$24,602 | \$22,481 | \$23,597 |
| Add: Interest paid (from p. 7) | <u>5,555</u> | <u>7,491</u> | <u>6,947</u> |
| CASH AVAILABLE FOR DEBT SERVICE & LIVING | \$30,157 | \$29,972 | \$30,594 |
| Less: Family living expenses* | <u>12,000</u> | <u>12,000</u> | <u>12,000</u> |
| CASH AVAILABLE FOR DEBT PAYMENT AND CAPITAL PURCHASES | \$18,157 | \$17,972 | \$18,544 |
| <u>Scheduled Annual Debt Payments</u> | | | |
| Real estate mortgage | \$ 6,651 | \$ 7,146 | \$ 7,141 |
| Cattle and equipment liens | 5,356 | 9,268 | 7,895 |
| Installment contracts | 810 | 819 | 949 |
| Notes and other | <u>2,033</u> | <u>1,650</u> | <u>2,048</u> |
| TOTAL PAYMENTS PLANNED 1978 | \$14,850 | \$18,883 | \$18,033 |
| <u>Measure of Debt Commitment & Equity Position</u> | | | |
| Scheduled debt payments per cow | \$225 | \$266 | \$254 |
| Scheduled debt payments as % of milk sales | 16% | 20% | 19% |
| Farm debt per cow | \$1,375 | \$1,613 | \$1,509 |
| Percent equity (total) | 70% | 63% | 65% |

*Estimated at \$10,000 per family and one family per operator.

An analysis of the farm business financial situation can point up many things about the operator's management of finances. The checklist below is designed to help focus on financial management practices and how they compare with other dairymen.

Table 15. A FARM FINANCE CHECKLIST FOR REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| | 1977 | | | |
|--|------------|---------|--------------------------|-------------------------|
| | Registered | Grade | Av. 570 N.Y. Farms | Av. Top 10% Farms |
| A. <u>How assets are being used:</u> | | | | |
| 1. Total inventory (capital)/cow | \$4,300 | \$4,000 | \$4,000 | \$3,700 |
| 2. % assets in productive units | 21% | 18% | 18% | 20% |
| 3. % assets in farm real estate | 49% | 52% | 49% | 45% |
| 4. % assets in machinery | 19% | 19% | 18% | 18% |
| 5. % assets in cash and checking accounts | 1% | 1% | 1% | 1% |
| B. <u>Characteristics of the debt structure:</u> | | | | |
| 1. % debt long-term | 58% | 56% | 55% | 58% |
| 2. % debt in chattel liens | 31% | 35% | 34% | 31% |
| 3. % debt installment contracts | 3% | 2% | 3% | 3% |
| 4. % debt in notes & open accounts | 8% | 7% | 8% | 8% |
| C. <u>Have you borrowed to the limit?</u> | | | | |
| 1. % equity in business | 70% | 63% | 65% | 71% |
| 2. Real estate debt as % of inventory value | 36% | 42% | 39% | 38% |
| 3. Liens as % of livestock & machinery inventory | 24% | 36% | 36% | 24% |
| D. <u>How is your debt repayment schedule?</u> | | | | |
| 1. Farm debt per cow | \$1,375 | \$1,613 | \$1,500 | \$1,200 |
| 2. Scheduled debt payments/cow | \$225 | \$266 | \$254 | \$216 |
| 3. Scheduled debt payments as % milk check | 16% | 20% | 19% | 15% |
| E. <u>What financial progress did you make last year?</u> | | | | |
| 1. Change in farm assets | xxx | xxx | +\$20,100 | xxx |
| 2. Change in farm debts | xxx | xxx | +\$9,500 | xxx |
| 3. Change in net worth | xxx | xxx | +\$10,600 | xxx |

The financial position of the registered herd farms as shown on the checklist above was stronger than that of the grade herds and in many respects approached that of the top 10% of the 570 farms in 1977.

Analysis of the Farm Business

Research has shown that certain factors controlled by management affect farm incomes. In analyzing a farm business, we examine the factors of size, rates of production, labor efficiency, capital efficiency and cost control.

Size of Business

Studies have shown that in general larger farms pay better. Two basic reasons for this are that larger businesses make possible more efficient use of overhead inputs such as labor and machinery and there are more production units (cows) on which to make a profit. However, if a large farm is poorly operated, the losses also will be larger.

Table 16. MEASURES OF SIZE OF BUSINESS BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Measure | Registered | Grade | 570 New York Farms, 1977 |
|----------------------|------------|---------|-----------------------------|
| Number of cows | 88 | 70 | 71 |
| Number of heifers | 53 | 51 | 51 |
| Pounds milk sold | 932,800 | 991,600 | 964,800 |
| Man equivalent | 2.4 | 2.4 | 2.5 |
| Total work units | 742 | 780 | 785 |
| Total acres of crops | 202 | 216 | 219 |

The average size of the grade herds was larger than the registered except for man equivalent, and was about the same as the average of the 570 New York State farms summarized for 1977.

Number of cows is one measure of size. In the table below, the registered and grade herds were sorted by number of cows and the labor income is shown for each size group. In general, the large farms paid better. The highest labor and management income per operator for both groups was for 100 and over cows.

Table 17. COWS PER FARM AND LABOR AND MANAGEMENT INCOME
570 New York Dairy Farms, 1977

| Number of Cows | Percent of Farms | | Labor & Mgt. Income/Operator | |
|-------------------|------------------|-------|------------------------------|----------|
| | Registered | Grade | Registered | Grade |
| Under 40 | 15% | 13% | \$2,113 | -\$1,388 |
| 40 - 69 | 52 | 50 | 1,573 | 2,831 |
| 70 - 99 | 19 | 22 | 6,206 | 4,241 |
| 100 & over | 15 | 15 | 7,103 | 4,641 |

The grade herds had the better average income for the 40 to 69 cow group but the registered herds paid better for all the other three groups.

Rates of Production

Crop yields and rates of animal production are factors that affect farm incomes. In the table below, we examine the crops grown and yields along with the pounds of milk sold per cow.

Table 18. CROP YIELDS AND MILK SOLD PER COW
BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Crop | Average of Registered Herds Farms | | | Average of Grade Herds Farms | | |
|-------------------|--------------------------------------|--------|-----------|---------------------------------|--------|-----------|
| | Reporting | Acres | Yield | Reporting | Acres | Yield |
| Dry hay | 123 | 66 | (combined | 240 | 74 | (combined |
| Hay crop silage | 85 | 70 | below) | 184 | 67 | below) |
| Corn silage | 115 | 54 | 14.9 ton | 227 | 59 | 13.9 ton |
| Grain corn | 57 | 57 | 84 bu. | 93 | 64 | 95 bu. |
| Oats | 37 | 26 | 47 bu. | 52 | 27 | 50 bu. |
| ----- | | | | | | |
| Hay equivalent: | | | | | | |
| All hay crops | 123 | 107 | 2.6 ton | 240 | 117 | 2.3 ton |
| All hay & silage | 123 | 157 | 3.3 ton | 240 | 174 | 3.0 ton |
| Milk sold per cow | | 14,133 | | | 14,166 | |

Tons of hay equivalent of all hay and silage is a good measure of the overall rate of forage production. One ton of hay equivalent is equal to one ton of dry hay containing 90 percent dry matter.

The forage crop yields reported by the registered herd farms were generally better than those from the grade herd farms. There was no significant difference in the pounds of milk sold per cow.

The importance of good production per cow is shown in the table below. On a dairy farm, the rate of production per cow is a key factor affecting the income for both registered and grade herds.

Table 19. MILK SOLD PER COW & LABOR INCOME BY REGISTERED & GRADE HERDS
363 New York Dairy Farms, 1977

| Pounds of Milk Sold Per Cow | Number of Farms | | Labor & Mgt. Income/Opr. | |
|--------------------------------|-----------------|-------|--------------------------|----------|
| | Registered | Grade | Registered | Grade |
| Under 10,000 | 6 | 10 | -\$8,849 | -\$5,418 |
| 10,000 - 10,999 | 7 | 9 | -884 | -4,957 |
| 11,000 - 11,999 | 6 | 21 | 5,259 | 2,933 |
| 12,000 - 12,999 | 18 | 38 | -261 | 66 |
| 13,000 - 13,999 | 21 | 58 | 5,948 | 3,532 |
| 14,000 - 14,999 | 25 | 37 | 3,480 | 7,011 |
| 15,000 - 15,999 | 26 | 39 | 7,064 | 1,897 |
| 16,000 & over | 14 | 28 | 4,647 | 5,864 |

Labor Efficiency

Efficient use of labor is an important factor in profitable milk production. Several measures of accomplishment per man or labor efficiency are shown below.

Table 20. MEASURES OF LABOR EFFICIENCY BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | 570 New York Farms, 1977 |
|------------------------|------------|---------|--------------------------|
| Man equivalent | 2.4 | 2.4 | 2.5 |
| Cows per man | 27 | 29 | 28 |
| Lbs. milk sold per man | 385,455 | 409,752 | 385,900 |
| Work units per man | 307 | 322 | 314 |

Number of cows per man is calculated by dividing the average number of cows by the man equivalent which includes the total farm labor force. The farms with grade herds cared for two more cows per man than the registered herd farms.

Pounds of milk sold per man is the best measure of labor efficiency on the dairy farm. It measures the ability of the labor force to handle a large number of cows without sacrificing milk output per cow. The grade herds sold 24,000 more pounds of milk per man than the registered herds.

It is important to look at other measures of labor efficiency, such as work units per man because all dairy farms do not have the same relationship between cows, heifers, and crops grown.

Labor efficiency depends on a number of things. Among these are the amount of mechanization, the field and building layout, the work methods, and the abilities of the workers. All of these are management items under the control of the operator. As shown in the table below, there is a general relationship between pounds of milk sold per man and labor and management income.

Table 21. MILK SOLD PER MAN AND LABOR AND MANAGEMENT INCOME
BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Pounds of Milk Sold Per Man | Number of Farms | | Labor & Mgt. Income/Opr. | |
|-----------------------------|-----------------|-------|--------------------------|----------|
| | Registered | Grade | Registered | Grade |
| Under 250,000 | 11 | 23 | -\$4,681 | -\$2,163 |
| 250,000 - 299,999 | 17 | 30 | 1,767 | -606 |
| 300,000 - 349,999 | 22 | 37 | 1,211 | 3,455 |
| 350,000 - 399,999 | 14 | 44 | 5,876 | -533 |
| 400,000 - 449,999 | 22 | 28 | 3,665 | 3,135 |
| 450,000 - 499,999 | 14 | 27 | 295 | 8,113 |
| 500,000 - 599,999 | 16 | 39 | 10,981 | 6,842 |
| 600,000 & over | 7 | 12 | 14,144 | 8,352 |

Capital Efficiency

Capital is a key resource and it is important to analyze its use in the business. The measures of capital efficiency shown in the table below include owned as well as borrowed capital. Management of the borrowed capital was examined on page 12 in the form of a farm finance checklist. It's possible for a business to be under capitalized but investing too much capital per productive unit is a more common problem. The best way a farmer can get a good return on capital invested in his business is to "put it to work" efficiently.

Table 22. MEASURES OF CAPITAL EFFICIENCY BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | 570 New York Farms, 1977 |
|----------------------------------|------------|-----------|--------------------------|
| Farm capital per man | \$116,938 | \$117,055 | \$113,684 |
| Farm capital per cow | \$4,288 | \$4,047 | \$4,003 |
| Land & buildings per cow | \$2,191 | \$2,185 | \$2,137 |
| Land & buildings/crop acre owned | \$1,064 | \$1,055 | \$1,039 |
| Machinery investment per cow | \$838 | \$791 | \$778 |
| Capital turnover (years) | 2.7 | 2.6 | 2.6 |

Land and building investment per crop acre owned shows the relationship between investments in land and buildings and cropland. The farmer who owns little cropland but builds lots of farm buildings will have a relatively large land and building investment per crop acre owned and would indicate that his use of capital was "out of balance" with the land resource.

Capital turnover is calculated by dividing the total farm capital (total year-end farm inventory) by the total farm receipts for the year. The factor is called capital turnover because it measures the number of years of receipts needed to equal or "turnover" farm capital. A fast rate of turnover is desirable since it makes it possible to pay off capital purchases faster.

Table 23. SIZE OF HERD & CAPITAL EFFICIENCY BY REGISTERED & GRADE HERDS
363 New York Dairy Farms, 1977

| Number of Cows | Number of Farms | | Capital Investment Per Cow In: | | | |
|----------------|-----------------|-------|--------------------------------|---------|------------|-------|
| | Registered | Grade | Real Estate | | Machinery | |
| | | | Registered | Grade | Registered | Grade |
| Under 40 | 18 | 31 | \$2,286 | \$2,381 | \$894 | \$843 |
| 40 - 69 | 64 | 121 | 2,445 | 2,190 | 874 | 833 |
| 70 - 99 | 23 | 52 | 2,390 | 2,252 | 888 | 783 |
| 100 & over | 18 | 36 | 1,723 | 2,021 | 753 | 711 |

There was no consistent pattern between registered and grade herds for the real estate investment per cow, but for machinery per cow the registered herds were consistently higher.

Cost Control

The control of costs is a dominant factor in the success of modern commercial dairy operations. Feed, machinery, and labor costs are major items and are examined in detail. However, it is important to check all cost items both large and small.

Feed Costs - feed is the largest single expenditure on the dairy farm. These 363 New York dairy farms put about one-third of the dollar spent into dairy feed during 1977. In general, all feed expenses including the cost of growing feed crops account for more than half of the costs of producing milk.

The crop program has an important influence on purchased feed costs. Both roughages and grains grown have a bearing on the purchased feed items. Also, the heifer raising practices affect feed costs. The overall feed situation must be examined and evaluated as a "system".

Table 24. FEED COSTS & RELATED MEASURES BY REGISTERED & GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | 570 New York Farms, 1977 |
|-----------------------------------|------------|--------|--------------------------|
| Feed bought per cow | \$394 | \$409 | \$377 |
| Crop expense per cow | \$108 | \$113 | \$107 |
| Feed bought per cwt. milk | \$2.79 | \$2.88 | \$2.77 |
| Feed & crop expense per cwt. milk | \$3.55 | \$3.68 | \$3.56 |
| Percent feed is of milk receipts | 29% | 30% | 28% |
| Hay equivalent per cow (tons) | 8.0 | 7.5 | 7.6 |
| Crop acres per cow | 3.1 | 3.1 | 3.1 |
| Lime and fertilizer per crop acre | \$21 | \$23 | \$22 |
| Heifers as % of cow numbers | 80% | 73% | 72% |

Feed bought per cow in 1977 for both the registered and grade herd farms was higher (\$17 and \$32) than the 570 New York farms spent in 1977. Feed bought per hundredweight of milk sold also was higher as was the percent of the milk check to buy dairy feed. The crop acres per cow was the same for all three groups shown above. However, the registered herd farms did produce more hay equivalent per cow (8.0 vs. 7.5 and 7.6). It must be remembered that 1977 generally was not as good a crop year as 1978.

Heifers as a percent of cows was less for the grade herds than for the registered herds. The registered herds grow more heifers so they can sell more cattle for dairy purposes.

Machinery, Labor and Miscellaneous Costs - labor and machinery operate as a "team" on a modern farm. The challenge is to get an efficient combination that will give a reasonable cost per unit of output.

Table 25. LABOR & MACHINERY COSTS BY REGISTERED & GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | 570 New York Farms, 1977 |
|-----------------------------------|------------|----------|--------------------------|
| Total machinery ^{1/} | \$18,010 | \$18,398 | \$18,267 |
| Machinery cost per cow | \$273 | \$263 | \$257 |
| Machinery costs/cwt. milk | \$1.93 | \$1.86 | \$1.89 |
| Total labor costs ^{2/} | \$17,531 | \$17,868 | \$18,266 |
| Labor costs per cow | \$266 | \$255 | \$257 |
| Labor costs/cwt. milk | \$1.88 | \$1.80 | \$1.89 |
| Labor & machinery costs/cwt. milk | \$3.81 | \$3.66 | \$3.78 |

1. Machinery depreciation, seven percent interest on the average machinery inventory, machine hire, machinery repairs, farm share of auto expense, and gas and oil are all included.
2. Includes hired labor and paid family labor, plus unpaid family labor valued at \$400 per month and operator's labor valued at \$600 per month.

Both total machinery and total labor costs were slightly less for the registered than for the grade herds in 1977, but the costs per cow and per cwt. of milk were higher because of smaller operations. This emphasizes the importance of a balance between machinery and labor and the units of output.

Table 26. MISCELLANEOUS COSTS CONTROL MEASURES
BY REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Item | Registered | Grade | 570 New York Farms, 1977 |
|---------------------------------|------------|---------|--------------------------|
| Veterinary & medicine per cow | \$28 | \$23 | \$24 |
| Other livestock expense per cow | \$54 | \$49 | \$46 |
| Real estate expense per cow | \$109 | \$103 | \$99 |
| Total farm expenses per cow | \$1,543 | \$1,520 | \$1,460 |

Other livestock expenses per cow include dairy supplies, bedding and DHIC fees but exclude breeding fees and milk marketing. Real estate expenses include repairs, taxes, insurance, and rent. The costs per cow for most items seemed to be a little higher for the registered herds than for the grade herds.

Feeding Practices

Much information on feeding practices is collected by the Dairy Herd Improvement record system. With the use of computers, a number of helpful management factors are calculated and made available to the farmer for use in making his feeding management decisions. These are reported on this page.

Table 27. FEEDING PRACTICES OF REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Factor | Registered | Grade | 363 Farms |
|-----------------------------|------------|-------|-----------|
| Pounds concentrates fed/cow | 5,573 | 5,606 | 5,595 |
| Feeding index | 118 | 120 | 119 |
| Rate of roughage feeding | 2.3 | 2.3 | 2.3 |
| Percent of net energy from: | | | |
| Concentrates | 47% | 48% | 48% |
| Succulents | 32% | 33% | 32% |
| Hay | 13% | 13% | 13% |
| Pasture | 9% | 7% | 8% |
| Income over value of feed | \$875 | \$827 | \$843 |

There was little difference in the average pounds of concentrates fed per cow by the registered operators and the grade herd operators. There was a wide range, however, within both herd groups.

The sources of net energy provided the cows is also computed. For the year, a total average for the herd is figured. This is what is reported and used in this study. Again there was no significant difference in the sources of net energy used by the registered and grade herd groups.

Income over value of feed is a dollar figure frequently used in the DHI record work. The value of the milk produced is computed along with a total cost or value of the feed fed to the cow. The difference is the amount available to cover wastage and all costs other than feed. The registered herds had an income over value of feed of \$875 compared with \$827 for the grade herds. These two figures are in line with the labor incomes calculated earlier using the farm business records.

Below is a summary table showing the relationship of pounds of concentrates fed per cow and related business factors.

Table 28. POUNDS OF CONCENTRATES FED PER COW AND RELATED FACTORS
363 New York Dairy Farms, 1977

| Lbs. Concentrate/Cow | Number of Cows | Lbs. Milk Per Cow | | Labor & Mgt. Income/Opr. |
|----------------------|----------------|-------------------|--------|--------------------------|
| | | Produced | Sold | |
| 3,000 or less | 39 | 12,000 | 11,500 | \$2,849 |
| 3,001 to 4,000 | 54 | 12,400 | 11,800 | 752 |
| 4,001 to 5,000 | 58 | 13,900 | 13,200 | 3,209 |
| 5,001 to 6,000 | 68 | 14,900 | 14,100 | 4,068 |
| 6,001 & over | 79 | 16,200 | 15,100 | 2,495 |

Breeding Practices

Feeding and breeding practices are both important elements in dairy herd management. Again information is gathered through the DHI system and many useful indicators are provided to the dairymen. Below are some selected breeding factors.

Table 29. BREEDING PRACTICES OF REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Factor | Registered | Grade | 363 Farms |
|--|------------|-------|-----------|
| % days in milk | 86% | 86% | 86% |
| Average days dry | 62 | 62 | 62 |
| Projected calving interval | 12.9 | 13.0 | 12.9 |
| Breedings per conception | 1.7 | 1.7 | 1.7 |
| Age at first calving | 29 | 29 | 29 |
| Weight at first calving | 1,080 | 1,070 | 1,080 |
| Age all cows | 55 | 54 | 54 |
| Weight all cows | 1,250 | 1,230 | 1,240 |
| % leaving herd for other than dairy purposes | 26% | 30% | 29% |

The registered and grade herds were similar in many of the factors. A few small differences appear to exist. The registered herds had slightly heavier bodyweights both at first calving and for all cows. Similarly, the registered herds were a little older (55 vs. 54).

The percent leaving the herd showed a difference of 26% for the registered herds and 30% for the grade herds. The figures used here are that of cows leaving the herd for non-dairy purposes or as "culls". It is likely that the registered herds sold more animals for dairy purposes and thereby may have reduced somewhat the number leaving for culling reasons.

General Tables

The tables on the next four pages are general or summary type presentations. Table 30 contains the averages for all the dairy herd management practices studied. The tables on pages 22 to 24 are summary operating statements for the registered, the grade, and all 363 farms combined. These are useful when one wishes to get a quick overview of the general nature of these farms.

Table 30. AVERAGE OF SELECTED FACTORS FOR REGISTERED AND GRADE HERDS
363 New York Dairy Farms, 1977

| Factor | Average | | |
|---|------------|-----------|-----------|
| | Registered | Grade | All Farms |
| Number of farms | 123 | 240 | 363 |
| % farms with DHIC records | 94% | 79% | 84% |
| % farms with owner-sampler | 6% | 21% | 16% |
| % farms with free stall barns | 29% | 38% | 35% |
| Man equivalent | 2.4 | 2.4 | 2.4 |
| Number of cows | 66 | 70 | 69 |
| Number of heifers | 53 | 51 | 51 |
| Total crop acres | 202 | 2.6 | 211 |
| Total end inventory | \$282,989 | \$283,274 | \$283,176 |
| Milk produced per cow | 14,895 | 14,762 | 14,807 |
| Milk sold per cow | 14,133 | 14,166 | 14,083 |
| Tons hay equivalent per acre | 2.6 | 2.3 | 2.4 |
| Tons corn silage per acre | 14.9 | 13.9 | 14.3 |
| Cows per person | 27 | 29 | 29 |
| Milk sold per person | 385,455 | 409,752 | 401,529 |
| Feed purchased per cow | \$394 | \$409 | \$402 |
| % feed is of milk receipts | 29% | 30% | 29% |
| Feeding index | 118 | 120 | 119 |
| Rate of roughage feeding | 2.3 | 2.3 | 2.3 |
| Pounds concentrates fed/cow | 5,573 | 5,606 | 5,595 |
| % net energy from concentrates | 47% | 48% | 48% |
| % net energy from succulents | 32% | 33% | 32% |
| % net energy from hay | 13% | 13% | 13% |
| % net energy from pasture | 9% | 7% | 8% |
| Projected minimum calving interval (months) | 12.9 | 13.0 | 12.9 |
| Days dry | 62 | 62 | 62 |
| % days in milk | 86% | 86% | 86% |
| Breedings per conception | 1.7 | 1.7 | 1.7 |
| % leaving herd | 26% | 30% | 29% |
| Age at first calving (months) | 29 | 29 | 29 |
| Age all cows (months) | 55 | 54 | 54 |
| Bodyweight all cows (lbs.) | 1,250 | 1,230 | 1,240 |
| Bodyweight at first calving (lbs.) | 1,080 | 1,070 | 1,080 |
| Income over value feed | \$875 | \$827 | \$843 |
| Average price received for milk | \$9.78 | \$9.74 | \$9.75 |
| Labor & management income per operator | \$3,688 | \$2,914 | \$3,178 |

Table 31.

FARM BUSINESS SUMMARY FOR REGISTERED HERDS
123 New York Dairy Farms, 1977

| <u>CAPITAL INVESTMENT</u> | | | <u>RECEIPTS</u> | |
|------------------------------|---------------|---------------|------------------------------|-----------|
| | <u>1/1/77</u> | <u>1/1/78</u> | | |
| Livestock | \$ 58,459 | \$ 62,010 | Milk sales | \$91,260 |
| Feed & supplies | 20,917 | 21,051 | Crop sales | 759 |
| Machinery & equipment | 50,070 | 55,290 | Dairy cattle sold | 7,262 |
| Land & buildings | 134,912 | 144,638 | Livestock sales | 1,630 |
| TOTAL INVESTMENT | \$264,358 | \$282,989 | Gas tax refund | 147 |
| | | | Government payments | 377 |
| | | | Work off farm | 93 |
| | | | Custom machine work | 87 |
| | | | Miscellaneous | 1,081 |
| | | | TOTAL CASH RECEIPTS | \$102,696 |
| | | | Increase in livestock | 3,551 |
| | | | Increase in feed & supplies | 134 |
| | | | TOTAL FARM RECEIPTS | \$106,381 |
| <u>EXPENSES</u> | | | <u>FINANCIAL SUMMARY</u> | |
| <u>Labor</u> | | | Total Cash Receipts | \$102,696 |
| Hired | | \$ 7,331 | Total Cash Expenses | 78,094 |
| <u>Feed</u> | | | NET FARM CASH FLOW | \$ 24,602 |
| Dairy concentrate | | 26,036 | Total Farm Receipts | \$106,381 |
| Hay and other | | 1,244 | Total Farm Expenses | 101,826 |
| <u>Machinery</u> | | | LABOR & MGT. INCOME/FARM | \$ 4,555 |
| Machine hire | | 804 | Number of operators (152) | 1.2 |
| Machinery repair | | 4,631 | LABOR & MGT. INCOME/OPERATOR | \$ 3,688 |
| Auto expense | | 337 | | |
| Gas and oil | | 2,939 | <u>BUSINESS FACTORS</u> | |
| <u>Livestock</u> | | | Man equivalent | 2.4 |
| Purchased animals | | 2,231 | Number of cows | 66 |
| Breeding fees | | 1,526 | Number of heifers | 53 |
| Veterinary, medicine | | 1,832 | Acres of hay crops | 107 |
| Milk marketing | | 2,237 | Acres of corn silage | 54 |
| Other livestock expense | | 3,580 | Total acres of crops | 202 |
| <u>Crops</u> | | | Lbs. of milk sold | 932,800 |
| Lime and fertilizer | | 4,340 | Lbs. of milk sold/cow | 14,133 |
| Seeds and plants | | 1,476 | Tons hay crops/acre | 2.6 |
| Spray and other | | 1,292 | Tons corn silage/acre | 14.9 |
| <u>Real Estate</u> | | | Lbs. of milk sold/man | 385,455 |
| Land, building, fence repair | | 1,730 | Cows per man | 27 |
| Taxes | | 2,552 | % feed is of milk sales | 29% |
| Insurance | | 1,767 | Feed & crop exp./cwt. milk | \$3.55 |
| Rent | | 1,139 | Lime & fertilizer/crop acre | \$21 |
| <u>Other</u> | | | Machinery cost/cow | \$273 |
| Telephone (farm share) | | 385 | Av. price/cwt. milk | \$9.78 |
| Electricity (farm share) | | 1,727 | | |
| Interest paid | | 5,555 | | |
| Miscellaneous | | 1,403 | | |
| TOTAL CASH EXPENSES | | \$ 78,094 | | |
| Machinery depreciation | | 5,611 | | |
| Building depreciation | | 2,669 | | |
| Unpaid labor | | 1,200 | | |
| Interest on farm equity @ 7% | | 14,252 | | |
| TOTAL FARM EXPENSES | | \$101,826 | | |

Table 32.

FARM BUSINESS SUMMARY FOR GRADE HERDS
240 New York Dairy Farms, 1977

CAPITAL INVESTMENT

| | 1/1/77 | 1/1/78 |
|-----------------------|-----------|-----------|
| Livestock | \$ 50,934 | \$ 54,039 |
| Feed & supplies | 20,488 | 20,949 |
| Machinery & equipment | 50,595 | 55,367 |
| Land & buildings | 142,447 | 152,919 |
| TOTAL INVESTMENT | \$264,464 | \$283,274 |

EXPENSES

Labor

Hired \$ 8,268

Feed

Dairy concentrate 28,605
Hay and other 1,315

Machinery

Machine hire 747
Machinery repair 4,745
Auto expense 342
Gas and oil 2,936

Livestock

Purchased animals 2,602
Breeding fees 1,165
Veterinary, medicine 1,620
Milk marketing 2,384
Other livestock expense 3,442

Crops

Lime and fertilizer 4,960
Seeds and plants 1,512
Spray and other 1,408

Real Estate

Land, building, fence repair 1,579
Taxes 2,613
Insurance 1,705
Rent 1,285

Other

Telephone (farm share) 370
Electricity (farm share) 1,704
Interest paid 7,491
Miscellaneous 1,058

TOTAL CASH EXPENSES \$ 83,856

Machinery depreciation 5,919
Building depreciation 2,684
Unpaid labor 1,200
Interest on farm equity @ 7% 12,724

TOTAL FARM EXPENSES \$106,383

RECEIPTS

| | |
|---------------------|-----------|
| Milk sales | \$ 96,538 |
| Crop sales | 815 |
| Dairy cattle sold | 5,841 |
| Livestock sales | 1,216 |
| Gas tax refund | 153 |
| Government payments | 359 |
| Work off farm | 87 |
| Custom machine work | 120 |
| Miscellaneous | 1,208 |

TOTAL CASH RECEIPTS

\$106,337

Increase in livestock

3,105

Increase in feed & supplies

461

TOTAL FARM RECEIPTS

\$109,903

FINANCIAL SUMMARY

Total Cash Receipts

\$106,337

Total Cash Expenses

83,856

NET FARM CASH FLOW

\$ 22,481

Total Farm Receipts

\$109,903

Total Farm Expenses

106,383

LABOR & MGT. INCOME/FARM

\$ 3,520

Number of operators (290)

1.2

LABOR & MGT. INCOME/OPERATOR

\$ 2,914

BUSINESS FACTORS

Man equivalent

2.4

Number of cows

70

Number of heifers

51

Acres of hay crops

117

Acres of corn silage

59

Total acres of crops

216

Lbs. of milk sold

991,600

Lbs. of milk sold/cow

14,166

Tons hay crops/acre

2.3

Tons corn silage/acre

13.9

lbs. of milk sold/man

409,752

Cows per man

29

% feed is of milk sales

30%

Feed & crop exp./cwt. milk

\$3.68

Lime & fertilizer/crop acre

\$23

Machinery cost/cow

\$263

Av. price/cwt. milk

\$9.74

Table 33.

FARM BUSINESS SUMMARY
Average of 363 New York Dairy Farms, 1977

CAPITAL INVESTMENT

| | <u>1/1/77</u> | <u>1/1/78</u> |
|-----------------------|----------------|----------------|
| Livestock | \$ 53,484 | \$ 56,739 |
| Feed & supplies | 20,633 | 20,983 |
| Machinery & equipment | 50,417 | 55,341 |
| Land & buildings | <u>139,894</u> | <u>150,113</u> |
| TOTAL INVESTMENT | \$264,428 | \$283,176 |

EXPENSES

Labor

Hired \$ 7,951

Feed

Dairy concentrate 27,734
Hay and other 1,291

Machinery

Machine hire 767
Machinery repair 4,706
Auto expense 340
Gas and oil 2,937

Livestock

Purchased animals 2,476
Breeding fees 1,287
Veterinary, medicine 1,692
Milk marketing 2,335
Other livestock expense 3,489

Crops

Lime and fertilizer 4,750
Seeds and plants 1,500
Spray and other 1,369

Real Estate

Land, building, fence repair 1,630
Taxes 2,592
Insurance 1,726
Rent 1,235

Other

Telephone (farm share) 375
Electricity (farm share) 1,712
Interest paid 6,835
Miscellaneous 1,175

TOTAL CASH EXPENSES \$ 81,904

Machinery depreciation 5,814
Building depreciation 2,679
Unpaid labor 1,200
Interest on farm equity @ 7% 13,242

TOTAL FARM EXPENSES \$104,839

RECEIPTS

| | |
|---------------------|--------------|
| Milk sales | \$ 94,749 |
| Crop sales | 796 |
| Dairy cattle sold | 6,322 |
| Livestock sales | 1,356 |
| Gas tax refund | 151 |
| Government payments | 365 |
| Work off farm | 89 |
| Custom machine work | 109 |
| Miscellaneous | <u>1,165</u> |

TOTAL CASH RECEIPTS \$105,102

Increase in livestock 3,255

Increase in feed & supplies 350

TOTAL FARM RECEIPTS \$108,707

FINANCIAL SUMMARY

Total Cash Receipts \$105,102

Total Cash Expenses 81,904

NET FARM CASH FLOW \$ 23,198

Total Farm Receipts \$108,707

Total Farm Expenses 104,839

LABOR & MGT. INCOME/FARM \$ 3,868

Number of operators (442) 1.2

LABOR & MGT. INCOME/OPERATOR \$ 3,178

BUSINESS FACTORS

Man equivalent 2.4

Number of cows 69

Number of heifers 51

Acres of hay crops 114

Acres of corn silage 57

Total acres of crops 211

Lbs. of milk sold 971,700

Lbs. of milk sold/cow 14,083

Tons hay crops/acre 2.4

Tons corn silage/acre 14.3

Lbs. of milk sold/man 401,529

Cows per man 29

% feed is of milk sales 29%

Feed & crop exp./cwt. milk \$3.64

Lime & fertilizer/crop acre \$23

Machinery cost/cow \$265

Av. price/cwt. milk \$9.75