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F.D. DeLano

Michael R. Langemeier

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# MANAGEMENT ANALYSIS OF DAIRY COW HERD ENTERPRISES IN THE KANSAS FARM MANAGEMENT ASSOCIATION

*F. D. DeLano<sup>1</sup> and L. N. Langemeier<sup>1</sup>*

## Summary

Actual records of dairy cow herd enterprises from Kansas Farm Management Association farms over the past 4 years have shown an increase in returns over variable costs from \$17,900 to \$27,000 per farm for a 100-cow dairy herd in favor of herds with higher milk-producing cows. Cost per hundred weight of milk produced per cow decreased for the higher-producing herds compared with lower-producing herds, even though total cost per cow increased. In 1993, for every extra \$1.00 spent on feed and other variable costs, the higher producing herds earned \$2.34. This was a 234% return per dollar invested.

(Key Words: Economics, Dairy, Management.)

## Introduction

Detailed dairy cow herd records from farms enrolled in the Kansas Farm Management Association program are analyzed each year using the K-MAR-105 mainframe computer as the basis for providing valuable information to each participating dairy farm. This detailed information is also useful to nonmembers for benchmark comparisons. Total dairy herd production expenses, along with production information, are expressed on the basis on per hundred weight (cwt) of milk sold and per cow. This complete dairy herd enterprise analysis, along with DHIA records, provide the information for dairy farmers to evaluate correctly their dairy herd program.

## Procedures

Dairy cow herd producers keep monthly receipt and expense records in an account book or on a computerized accounting program. Detailed records of crop production, feed, and inventory are completed each year under the supervision of Extension Agricultural economists of the Farm Management Association Program.

Milk production is based totally on sales and, thus, does not include home use or milk fed to calves. The total feed expense includes all feed consumed by the dairy cow herd including pasture, value of stock fields, etc. Values are based on average farm market price for the current production year, inventory value, or actual purchase cost.

## Results and Discussion

The 1993 dairy cow herd enterprise records from 89 dairy farms were analyzed by dividing the farms into herds with milk sales below and above 17,500 milk per cow. High production per cow is very important to obtain acceptable returns to the operator for management, labor, and equity capital.

Table 1 compares these two milk production groups. In 1993, the higher-producing herds sold 3,834 lb more milk per cow (over 24% greater production), which resulted in \$471 additional gross income per cow. For the higher-producing herds, total feed cost per cow

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<sup>1</sup>Department of Agricultural Economics.

increased by \$82 and other variable costs (direct production costs) increased by \$119. These herds returned \$270 more per cow above variable costs than the lower-producing herds. For a 100-cow herd, higher production provided \$27,000 more income for family living, debt repayment, replacement of machinery and equipment, and other capital investments. Costs and returns for dairy herds ranked by production are illustrated in Table 2. Income

over feed cost and return to labor and management per cow increased significantly as milk production increased. Feed cost per cwt of milk production decreased significantly, whereas nonfeed costs remained fairly constant with increased milk production.

Table 3 provides information on all dairy herds for the past 4 years.

**Table 1. Kansas Farm Management Association Analysis of Milk Production by Dairy Cow Enterprise (1993)**

| Factor                    | Milk sold per cow  |                      |                       |                      |
|---------------------------|--------------------|----------------------|-----------------------|----------------------|
|                           | Under<br>17,500 lb |                      | 17,500 lb<br>and over |                      |
| <b>Production Data</b>    |                    |                      |                       |                      |
| No. farms                 | 33                 |                      | 56                    |                      |
| No. cows/farm             | 75                 |                      | 97                    |                      |
| Milk sold/cow, lb         | 15,452             |                      | 19,286                |                      |
|                           | Per<br>cow         | Per cwt<br>milk sold | Per<br>cow            | Per cwt<br>milk sold |
| <b>Production Returns</b> |                    |                      |                       |                      |
| Milk sold                 | \$1,990            | \$12.88              | \$2,445               | \$12.68              |
| Livestock sales and other | <u>311</u>         | <u>2.01</u>          | <u>327</u>            | <u>1.70</u>          |
| Gross income              | \$2,301            | \$14.89              | \$2,772               | \$14.38              |
| <b>Production Costs</b>   |                    |                      |                       |                      |
| Feed fed                  | \$1,341            | \$8.68               | \$1,423               | \$7.38               |
| Hired labor               | 138                | .89                  | 174                   | .90                  |
| Vet, supplies, marketing  | 301                | 1.95                 | 324                   | 1.68                 |
| Repairs, fuel, utilities  | 196                | 1.27                 | 239                   | 1.24                 |
| Interest & miscellaneous  | <u>99</u>          | <u>.64</u>           | <u>116</u>            | <u>.60</u>           |
| Total variable costs      | \$2,075            | \$13.43              | \$2,276               | \$11.80              |
| Return over variable cost | \$226              | \$1.46               | \$496                 | \$2.58               |

**Table 2. Costs and Returns of Farm Management Association Dairy Herds Ranked by Production for 1993**

| No. of cows | Milk sold, lb per cow | Feed cost per cwt | Other costs per cwt | Income over feed cost per cow | Labor and management return per cow |
|-------------|-----------------------|-------------------|---------------------|-------------------------------|-------------------------------------|
| 74          | 14,156                | \$8.69            | \$8.27              | \$ 567                        | \$ 43                               |
| 68          | 16,110                | 8.21              | 7.30                | 702                           | 77                                  |
| 98          | 18,024                | 7.57              | 7.26                | 920                           | 236                                 |
| 111         | 19,958                | 7.74              | 7.23                | 991                           | 374                                 |
| 120         | 21,855                | 6.18              | 7.55                | 1,395                         | 673                                 |

**Table 3. Kansas Farm Management Association Dairy Cow Enterprise Analysis, 1990-1993**

| Factor                    | 1990       | 1991       | 1992       | 1993       |
|---------------------------|------------|------------|------------|------------|
| <b>Production Data</b>    |            |            |            |            |
| No. farms                 | 87         | 113        | 108        | 89         |
| No. cows/farm             | 92         | 85         | 86         | 89         |
| Milk sold/cow, lb         | 17,969     | 17,518     | 18,135     | 18,054     |
| <b>Production Returns</b> |            |            |            |            |
|                           | Per cow    |            |            |            |
| Milk sold                 | \$2,471    | \$2,094    | \$2,360    | \$2,299    |
| Livestock and other       | <u>374</u> | <u>310</u> | <u>322</u> | <u>322</u> |
| Gross income              | \$2,845    | \$2,404    | \$2,682    | \$2,621    |
| <b>Production Costs</b>   |            |            |            |            |
| Feed fed                  | \$1,321    | \$1,311    | \$1,367    | \$1,396    |
| Hired labor               | 154        | 164        | 153        | 162        |
| Vet, supplies, marketing  | 293        | 272        | 304        | 316        |
| Repairs, fuel, utilities  | 211        | 209        | 218        | 234        |
| Interest & miscellaneous  | <u>111</u> | <u>114</u> | <u>96</u>  | <u>102</u> |
| Total variable costs      | \$2,090    | \$2,070    | \$2,138    | \$2,210    |
| Return over variable cost | \$755      | \$334      | \$544      | \$411      |