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# EFFECT OF YEARLY MILK PRODUCTION ON AVERAGE DAYS OPEN

*E. P. Call*

## Summary

Although there is a genetic antagonism between yearly production per cow and reproduction, analysis of Kansas Holstein herds suggests that managers of higher producing herds overcome this inverse relationship. Higher producing herds have fewer cows open at any given time, and those cows that are open average fewer days since last freshening. When open cows are categorized by days open, higher producing herds have fewer cows open more than 60 days, and especially fewer cows open more than 120 days.

(Key Words: Milk Production, Days Open, Dairy Cattle.)

## Introduction

Evaluating reproductive efficiency in the dairy enterprise is a complex problem. Most losses are "hidden" or insidious and after the fact. For example, calving interval cannot be determined until the cow has calved twice. Although all herds will have a group of cows categorized as OPEN -NOT YET BRED, the average days open for this group may have a marked influence on the overall reproductive loss in the herd. Considering the negative genetic correlation that exists between production and reproduction, higher producing herds may have greater losses from the percentage of cows open and average days open.

## Procedures

Kansas Holstein herds (n = 463) cooperating in the Dairy Herd Improvement program (DHIA) were evaluated using the Kansas State University Dairy Herd Analyzer

(KSU-DHA). The herds were ranked by rolling herd average (RHA) for milk and categorized by quartile. In addition to calculating losses associated with the various management areas, the percentage of cows open and cows open stratified by average days open were determined to evaluate the possible effect of yearly milk per cow (RHA) on the number of cows OPEN -NOT YET BRED.

## Results and Discussion

The economic effect of yearly milk production per cow (RHA) on various management areas is shown in Table 1. The evaluation assumes that all producers are capable of reaching the goals of the KSU-DHA. The losses depicted represent income-over-feed cost, in that feed cost per cwt milk is included in the calculations. As noted, reproductive losses are second only to nutrition (production) losses in the average herd included in the analysis.

**Table 1. Average Losses per Cow Associated with Various Management Areas in 463 Kansas Holstein Herds (1991)\***

| Management area | Loss/cow  |          |
|-----------------|-----------|----------|
|                 | \$        | %        |
| Nutrition       | 153       | 40       |
| Reproduction    | 134       | 34       |
| Milk Quality    | 69        | 18       |
| Genetics        | <u>33</u> | <u>8</u> |
| Total           | 389       | 100      |

\*KSU Dairy Herd Analyzer.

Table 2 evaluates the four factors included in reproduction management. Elongated calving interval accounts for 58% of the reproduction losses. Long calving interval is primarily

a function of "elective waiting period" to first service, which averaged 82 days in this study. The importance of reproductive efficiency associated with yearly milk per cow is illustrated in Table 3. Although higher producing herds are more efficient, reproductive losses make up a considerably larger portion of total losses realized.

**Table 2. Average Losses per Cow Associated with Reproductive Parameters in 463 Kansas Holstein Herds (1991)\***

| Reproduction area   | Actual | <u>Loss/cow</u> |           |
|---------------------|--------|-----------------|-----------|
|                     |        | \$              | %         |
| Calving interval, d | 411    | 78              | 58        |
| Days dry            | 60     | 15              | 11        |
| Services/conception | 2.1    | 8               | 6         |
| Age at calving, L-1 | 27     | <u>33</u>       | <u>25</u> |
|                     |        | 134             | 100       |

\*KSU Dairy Herd Analyzer.

**Table 3. Reproduction Losses in Kansas Holstein Herds Grouped by Rolling Herd Average (RHA) (1991)\***

| RHA<br>(lb) | <u>Yearly losses/cow</u> |                   |
|-------------|--------------------------|-------------------|
|             | Reproduction<br>(\$)     | % of Total<br>(%) |
| 12,715      | 164                      | 23                |
| 15,924      | 141                      | 27                |
| 17,580      | 128                      | 30                |
| 19,978      | 118                      | 42                |

\*KSU Dairy Herd Analyzer.

Table 4 indicates little effect of RHA on average days open for cows in the pregnant group. However, higher producing herds

have a marked advantage, with lower percentages of herd bred and especially of average days open for cows not yet serviced since calving. Although most herds practice an "elective waiting period" before servicing cows after calving, Table 5 shows an inverse relationship between RHA and percentage of cows open beyond 60 days fresh and especially beyond 120 days.

Although a negative relationship exists between production and reproduction, managers of higher producing herds apparently overcome this inverse effect by initiating procedures to get cows serviced earlier in the postpartum period. Synchronization programs are available to minimize cows open that should be bred.

**Table 4. Average Days Open in Pregnant and Open Cows and Percent of Herd Not Bred in Kansas Holstein Herds Grouped by Rolling Herd Average (RHA) (1991)**

| RHA<br>(lb) | <u>Group</u>                 |                              |           |
|-------------|------------------------------|------------------------------|-----------|
|             | <u>Pregnant</u><br>Days open | <u>Not bred</u><br>% of herd | Days open |
| 12,715      | 135                          | 41                           | 138       |
| 15,924      | 130                          | 32                           | 90        |
| 17,580      | 130                          | 34                           | 87        |
| 19,978      | 128                          | 30                           | 70        |

**Table 5. Percent of Herd Open by Average Days Open in Kansas Holstein Herds Grouped by Rolling Herd Average (RHA) (1991)**

| RHA<br>(lb) | <u>Percentage of cows open</u> |        |         |
|-------------|--------------------------------|--------|---------|
|             | < 60 d                         | > 60 d | > 120 d |
| 12,715      | 43                             | 57     | 35      |
| 15,924      | 57                             | 43     | 22      |
| 17,580      | 54                             | 46     | 19      |
| 19,978      | 60                             | 40     | 12      |