Effect of production on reproduction

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Abstract

The genetic antagonsim that exists between production and reproduction is overcome by sound management practices. Kansas Holstein herds were ranked by quartile and analyzed by comparing various reproductive traits. Higher producing herds suffered less reproductive loss based upon the factors considered. The most significant differences concerned the average days dry, average days open on cows not yet serviced, percent of cows open more than 120 days since fresh, and average age at first calving. An adequate record system will identify potential reproductive problems, and a sound Preventive Herd Health Program (PHHP) will minimize actual losses from disease and cows not yet bred. All herds, regardless of production level, would benefit by calving heifers at 24 mo.; Dairy Day, 1987, Kansas State University, Manhattan, KS, 1987;

Keywords

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EFFECT OF PRODUCTION ON REPRODUCTION

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Summary

The genetic antagonsim that exists between production and reproduction is overcome by sound management practices. Kansas Holstein herds were ranked by quartile and analyzed by comparing various reproductive traits. Higher producing herds suffered less reproductive loss based upon the factors considered. The most significant differences concerned the average days dry, average days open on cows not yet serviced, percent of cows open more than 120 days since fresh, and average age at first calving. An adequate record system will identify potential reproductive problems, and a sound Preventive Herd Health Program (PHHP) will minimize actual losses from disease and cows not yet bred. All herds, regardless of production level, would benefit by calving heifers at 24 mo.

Introduction

While dairy producers have long suspected that higher producing cows have more reproductive problems, it was not until 1982 that Iowa State researchers showed a genetic antagonism between production and reproductive characteristics. However, research at the same institution demonstrated that the negative effect could be overcome by sound management. Factors that contribute to reproductive losses include: (1) days to first breeding, (2) days dry, (3) age at first calving, (4) services per conception, (5) calving interval, (6) percent of cows not serviced by 120 days, (7) average days open for cows not serviced, and (8) disease and nutritional entities. A sound Preventive Herd Health Program (PHHP) and adequate records have been shown to be essential in minimizing reproductive losses.

Procedures

Holstein herds participating in the Kansas Dairy Herd Improvement Program (DHIA) were ranked by quartile and summarized for various reproductive parameters. These herds had rolling herd averages (RHA) as of February, 1987 and reported reproductive information. Reproductive losses were calculated based upon the following measurements as described in DyS 87-6, Focus on Dairy: Repro-losses. Extension Dairy Science, Kansas State University, 1987: (1) calving interval, (2), days dry, (3) services per conception, and (4) age at first calving.

While percent of cows not serviced by 120 days and average days open for cows not yet serviced also contribute to reproductive losses in elongated calving intervals, no measure could be applied to estimate the economic loss from these factors.

Results and Discussion

The data are summarized in Table 1. Ranking dairy herds by RHA is based upon the long-accepted fact that higher producing cows convert feed into milk more efficiently and, therefore, are more profitable. RHA is also an effective way to rank herds to demonstrate the effect of production on reproduction but does not identify specific or individual cow problems.

Surprisingly, reproductive losses per cow declined as RHA increased, with the low quartile experiencing $152 yearly loss per cow, whereas the high group averaged $109. There were no differences among groups for calving interval, days to first service, and services per conception. Main effects were average days dry and age of first-calf heifers. The obvious differences among the groups, which was not included in the economic analysis, were the average days open for cows not bred (124 to 77) and the percent of cows open more than 120 days (32 to 14).

Table 1. Average reproductive characteristics of 582 Kansas Holstein herds with 42,365 cows grouped by level of rolling herd average (RHA). February, 1987

Rolling herd avg -milk- (lb)	Min. calving interval (days)	Calving to first service (days)	Open cows (%)	Open cows (days)	Open cows (%>120 days)	Services/ conception	Dry period (days)	Reprod. losses/ cow ($)
12,015	403	85	37	124	32	1.8	73	152
14,679	403	81	31	100	27	2.0	67	140
16,524	405	81	28	84	19	2.0	63	124
18,686	405	80	27	77	14	2.1	60	109