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REPRODUCTIVE CHARACTERISTICS OF KANSAS HOLSTEIN

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HERDS GROUPED BY ROLLING HERD AVERAGE

UE.P. Call and J.S. Stevenson

Summary

An analysis of 635 Kansas Holstein herds with 41,426 cows indicated that the negative genetic antagonism between production and reproduction can be overcome with good management practices. As rolling herd average increased, only services per conception increased by 0.2 units. All other reproductive traits favored higher yearly production. Days to first service and cows not yet bred are the main factors responsible for less than ideal reproductive performance in Kansas Holstein herds.

Introduction

Research data, as well as a common belief among dairy producers, indicate that a negative correlation exists between production and reproduction. This antagonism suggests that higher producing cows have more days open, require more services per conception and have fewer calves born. Even though this genetic antagonism appears to be real, research indicates that management practices can overcome this detrimental effect, and it should not be a deterrent to achieving higher levels of production with the accompanying increase in potential profit. This study was undertaken to investigate the effect of milk production on reproduction in Kansas Holstein herds enrolled in Dairy Herd Improvement (DHIA).

Procedures

In 1984, there were 635 DHIA Holstein herds in Kansas that reported reproduction information on 41,426 cows. The herds were stratified according to rolling herd average (RHA) as a means of evaluating the effect of yearly production on various reproductive traits. While calving interval is the most common assessment of reproductive efficiency, the percent of cows open and especially the average days open contribute to reproductive losses within a herd. Services per conception indicate the efficiency of getting cows bred. Average days dry may be indirectly related to reproductive problems. However, dry days have a definite effect on RHA, since total cows days are used in calculating RHA. In this study, the average calving interval is calculated with the assumption that the last recorded service date was successful and is referred to as "minimum" calving interval.

Results and Discussion

RHA is stressed in the production testing program because it is highly correlated with efficiency as measured by income-over feed costs. Cows producing at higher levels convert feed into milk more efficiently, since maintenance feed costs are the same no matter what the level of production for cows of similar body weight. Calving interval is stressed, since cows calving with greater frequency will spend a greater portion of their lactations in the more profitable early phase when peak yields are highest and will also produce more calves in their lifetime.

The analysis indicates that the only effect of yearly production on reproduction is an increase in services per conception by 0.2 units as noted in Table 1. Herds with higher RHA had shorter calving intervals primarily because cows were bred sooner as indicated by days to first service. The most striking difference was noted in the cows not yet bred, i.e., open cows. While any herd will have open cows, the percent of cows open varied inversely with RHA, as did the average days open which was 147 in the lowest group and 66 in the highest producing herds. Another measure of reproductive management is the percent of cows open for more than 120 days. As noted, 41% of the open cows fell into this category in the lowest group, whereas only 11% had not been bred in the herds averaging 19,152 lb. A similar trend was seen in the average dry period with higher RHA herds having fewer days dry and a smaller percentage of cows dry for more than 70 days.

Table 1. Average reproductive characterization of 635 Kansas Holstein herd with 41,426 cows grouped by level of rolling herd average (RHA) (January, 1985).

RHA Milk (lb)	Minimum ^a calving interval (days)	Days to first breeding (days)	Open cows ^b		Serv/ Concep- tion	Dry period		
			(%)	(days)		(%>120 d)	(days)	(%>70 d)
10,699	411	94	37.9	147	40.9	1.8	84	48.4
12,565	401	83	34.9	111	31.8	1.8	75	44.1
13,569	399	80	28.4	92	26.3	1.9	73	39.0
14,510	404	86	30.2	91	21.1	1.9	69	31.4
15,504	406	85	30.8	83	19.0	1.9	67	30.7
16,514	403	84	29.0	80	15.0	1.9	67	27.0
17,414	403	79	24.7	65	11.1	2.0	63	23.1
19,152	402	81	30.2	66	10.5	2.0	63	20.0

^a Assumes last reported service was successful.

^b Cows not yet reported bred since calving.

Recommendations

1. Average days to first breeding is the most important management factor involved in long calving intervals. Reducing days to first breeding by one day will lower calving intervals by one-half day. Cows not bred by 60-70 days after calving should be evaluated and treated with prostaglandin $F_{2\alpha}$ (Lutalyse® or Estrumate®) if appropriate.
2. In average herds, cows not yet bred contribute the greatest loss in reproductive efficiency. A preventive herd health program (PHHP) in conjunction with a consulting veterinarian is the most cost-effective method of improving reproductive efficiency in a dairy herd.

