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EFFECT OF ENERGY INTAKE AND ONCE DAILY SUCKLING ON POSTPARTUM INTERVAL IN BRAHMAN X HEREFORD HEIFERS

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SUMMARY

Limiting first calf Brahman x Hereford heifers to one daily suckling period of 30 to 45 minutes shortened the time from calving to first estrus ($P < .005$). Increased energy level also shortened the postpartum interval ($P < .01$) with high energy heifers returning to estrus earlier than low energy heifers. Postpartum interval is critically affected by level of nutrition and frequency of suckling. A decrease in frequency of suckling shortened the postpartum interval even in heifers on below optimum levels of nutrition.

OBJECTIVES

The purpose of this research has been to develop management techniques capable of shortening the postpartum interval as effectively as early weaning without the major management problems associated with early weaned calves. This experiment was designed to show the correlation of dietary energy level with suckling frequency on time from calving to first estrus in Brahman x Hereford F-1 first calf heifers.

PROCEDURE

Fifty Brahman x Hereford F-1 first calf heifers were assigned to receive diets allowing either 0.5 lb average daily gain (34 heifers) or 0.5 lb average daily loss (16 heifers) in body weight from 220 days of pregnancy until calving. After calving the heifers fed to gain weight during pregnancy were fed at 125% NRC recommendations (high energy) and the heifers fed to lose weight during pregnancy were fed at 90% NRC recommendations (low energy). At 21 days postcalving the high energy heifers were divided into equal groups of 17 heifers each, one group to be suckled once daily and the other group suckled normally. All of the low energy heifers were suckled once daily. Once daily suckling was continued from 21 days postcalving until the heifers reached postpartum estrus. All heifers were maintained in drylots with sterile bulls

equipped with chin ball markers for estrus detection. All heifers were examined by rectal palpation, for formation of corpora lutea, 7 to 8 days after estrus. Once daily suckled calves were maintained in drylots with access to shelter, water, Coastal bermudagrass hay (1 lb/head/day) and 14% protein creep pellets (0.5 lb/head/day). Body weights and condition scores of the heifers were taken at 220 and 270 days of pregnancy, calving, 21 days postcalving and at estrus. Calf weights were taken at birth, 21 days of age and when their dam reached estrus.

RESULTS

Body weights of heifers at 220 days of pregnancy were 1038.3 ± 13.4 lbs for high energy and 1058.1 ± 27.5 lbs for low energy heifers. By 270 days of pregnancy the high energy heifers had gained an average of 30.1 lbs and the low energy heifers lost 23.7 lbs ($P < 0.10$). Condition scores of the high energy heifers were 6.9 ± 0.1 and low energy 7.0 ± 0.2 at 220 days of pregnancy and respectively 6.8 ± 0.1 and 6.1 ± 0.2 at 270 days of pregnancy ($P < 0.005$). High energy heifers had heavier calves (70.1 ± 1.5 lbs) than low energy heifers (64.2 ± 1.8 lbs; $P < 0.001$). Condition scores dropped from 6.8 ± 0.1 and 5.3 ± 0.3 for high and low energy heifers respectively at calving to 6.4 ± 0.2 and 5.1 ± 0.2 , 21 days postcalving. High energy calves gained 43.4 ± 2.2 lbs and low energy calves 37.9 ± 3.2 lbs by 21 days of age.

High energy once daily suckled heifers returned to estrus in 32.1 ± 1.9 days, low energy once daily suckled heifers in 71.4 ± 15.9 days and high energy normal suckled heifers in 124.2 ± 13.0 days postcalving ($P < 0.005$). All (17 of 17) of the high energy once daily suckled heifers, 87.5% (14 of 16) low energy once daily suckled heifers and 70.6% (12 of 17) high energy normal suckled heifers returned to estrus before weaning at 180 days. All (17 of 17) high energy once daily suckled heifers, 68.8% (11 of 16) low energy once daily suckled heifers and 35.3% (6 of 17) high energy normal suckled heifers returned to estrus before 90 days postcalving ($P < 0.01$).

Once daily suckling appears to be as effective as early weaning in shortening the postpartum interval in first calf beef heifers. Increased levels of nutrition in conjunction with decreased suckling stimuli were the most effective in shortening the postpartum interval. Decreas-

ing suckling stimuli appears to have more effect on postpartum interval in first calf heifers than does increasing the level of energy intake.

Once daily suckling, as a management tool, can shorten the postpartum interval in first calf heifers. This management practice could eliminate the problem of rebreeding first calf heifers if practiced in conjunction with good herd health and nutritional programs.