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EFFECTS OF NUTRITION AND SUCKLING MANAGEMENT ON REPRODUCTIVE EFFICIENCY AND CALF PERFORMANCE IN POSTPARTUM BRAHMAN COWS

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Background. Reproductive efficiency plays a major role in the success or failure of a beef breeding enterprise. A long postpartum interval will reduce the reproductive efficiency of a cow by causing her calving interval, the period of time from one calving to the next calving, to extend over 12 months. To maintain a calving interval of around one year, European breed (*Bos taurus*) females should become pregnant by 83 days after parturition and Zebu (*Bos indicus*) females should become pregnant by 73 days after calving.

Nutrition of the cow and suckling by the calf can influence the length of the postpartum interval. Through strategic management of these two elements, it may be possible to shorten the postpartum interval and improve reproductive efficiency in the beef cow. When deciding on management practices to enhance cow performance, the possible effects of the management techniques on calf performance must also be considered. Since the calf-crop is marketed for income and/or used for herd improvement, cow herd management practices should not significantly lower calf performance. The objectives of this experiment were to determine the effects of nutrition and once-daily suckling on reproductive performance of postpartum beef cows and weight gain of suckling calves.

Research Findings. Thirty-nine, fall-calving Brahman (*Bos indicus*) females in good body condition were randomly placed into 1 of 4 management groups after calving: high nutrition+normal suckling (HN), high nutrition+once-daily suckling (HX), low nutrition+normal suckling (LN), and low nutrition+once-daily suckling (LX). Nutritional management began at calving. High (H) nutrition cows received 8 lb/hd/day of a concentrate ration made up of 75% corn and 25% soybean meal. Low (L) nutrition cows did not receive any concentrates. All cows received Coastal bermudagrass hay, water, and minerals free choice. Suckling management began 21 days after calving. Once-daily suckled (X) cows were separated from their calves, but were allowed to nurse them for 30 minutes each morning. Separated calves were kept in a sheltered pen and had access to the concentrate ration, hay, and water as described above. After X cows were observed in heat, their calves were returned to them. Normal suckled (N) cows were not separated from their calves.

The postpartum interval was shorter in X cows than in N cows (42 vs 65 days; $P < .01$). The postpartum intervals for HX, LX, HN, and LN cows were 37, 47, 67, and 62 days,

respectively. A higher proportion of X dams returned to estrus than N dams by 42 days (67 vs 0%; $P < .01$) and 73 days (100 vs 56%; $P < .01$) after calving. Return to estrus percentages for HX, LX, HN, and LN groups were 89, 44, 0, and 0% by 42 days postcalving, respectively and 100, 100, 50, and 63% by 73 days postcalving, respectively. Once-daily suckling shortened the postpartum interval and increased the percentage of cows exhibiting estrus in time to rebreed to calve on an annual basis. In Brahman cows, postpartum intervals of 42 days or less allow for 2 breeding dates within the restraints of maintaining a 12 month calving interval, while postpartum intervals of 43 to 73 days allow for one breeding date. Increased nutrient intake enhanced the response of cows to the once-daily suckling regime. Pregnancy rates were 70% for X cows and 58% for N cows. Pregnancy rates for the management groups were: HX, 80%; LX, 60%; HN, 50%; and LN, 67%, respectively. The pregnancy rate in the HX group tended to be higher than the other 3 groups.

During the first week of once-daily suckling, the average daily weight gain of X calves was lower than for N calves (.05 vs 1.52 lb/day; $P < .01$). However, during the second week of calf separation, average daily gains were similar ($P > .1$) for the X calves (1.52 lb/day) and N calves (1.34 lb/day). Adjusted weaning weights were also similar for X and N calves (386 vs 374 lb; $P > .1$). Adjusted weaning weights of the 4 management groups were: HX, 382 lb; LX, 390 lb; HN, 405 lb; and LN, 345 lb, respectively. Once-daily suckling reduced calf weight gain temporarily, but did not lower calf weights at weaning. The level of dam nutrition can influence the weaning weights, as was the case in the normal suckled calves.

Application. The findings of this study indicate that controlled suckling can be an effective management technique to consider to improve reproductive efficiency of beef cows. Through the employment of the once-daily suckling, postpartum intervals can be shortened enough to permit the routing maintenance of 12-month calving intervals by giving cows the opportunity to become pregnant earlier after calving. While improving cow performance, once-daily suckling did not reduce preweaning calf performance. Increased nutrient intake of the postpartum cow can enhance the results obtained from the practice of controlled suckling. Increased dam nutrition can also improve calf performance. Herd management, resource utilization, marketing, and other aspects of a breeding beef enterprise may be optimized if 12-month calving intervals are made commonplace. With the implementation of a suckling management program, such as once-daily suckling, 365-day calving intervals in beef cows can be an obtainable goal.