indicating that protein supplementation may have resulted in cows being bred earlier in the breeding season.

This research indicates that problems with low supplement intake may occur when using cooked molasses blocks. Despite low supplement intake, quantity of dietary protein presumably had a positive effect on weight gain during the breeding season, maintaining cow body condition postpartum, and date of conception in first-calf beef heifers.

PROGRESS REPORT: INFLUENCE OF EARLY WEANING, FALL SUPPLEMENTATION AND WINTER/SPRING SUPPLEMENTATION AS SINGULAR OR COMBINED TREATMENTS ON THE PRODUCTIVITY OF RANGE COWS, YEAR 2

M. D. Gambill, E. E. Parker, L. Tubbs, M. K. Petersen,
G. B. Donart, and J. D. Wallace

(Key Words: Range Livestock, Supplemental Feeding, Early Weaning)

An ongoing five year study at the Corona Livestock and Range Research Station is being conducted to investigate the effects of weaning date (165 vs 225 days of age), fall supplementation of a 20% crude protein, 55% TDN block beginning at early weaning and continuing for 60 days (supplement vs no supplement), and late winter-early spring supplementation of a 38% crude protein, 52% TDN block beginning at calving and continuing for 90 days (supplement vs no supplement) on cow productivity and reproductive performance. The overall goal of this study is to investigate management techniques that will decrease input costs while maintaining optimal cow performance. This study involves approximately 190 crossbred cows in a 2 x 2 x 2 factorial arrangement of treatments. Currently, 2½ years of the study have been completed.

Preliminary data indicates that early weaning of calves results in increased cow body weight at normal weaning time compared to normally weaned cows (1038 vs 983 lbs, respectively). This increase in body weight was maintained throughout the entire next year. Cows receiving fall supplement also had increased body weight (1030 vs 992 lbs, respectively) and maintained the increase in body weight throughout the next year compared with non-supplemented cows. Cows receiving spring protein supplement lost less body weight during the postpartum supplementation period compared with non-supplemented cows (-174 vs -198 lbs, respectively). However, the heavier body weight was not maintained throughout the year when compared with non-supplemented cows. Cow condition score change from early weaning to normal weaning time was increased in cows that had their calves weaned early or cows receiving fall supplementation.

Calves that were early weaned had decreased weaning weights compared with normal weaned calves at normal weaning time (400 vs 486 lbs, respectively). Fall supplementation to cows resulted in increased calf weaning weights at normal weaning compared with non-supplemented cows (475 vs 453 lbs, respectively). Spring protein supplementation to cows also resulted in increased calf weaning weights at normal weaning compared with non-supplemented cows (473 vs 455 lbs, respectively).

Differences in reproductive measurements were primarily associated with cow age. Three-year-old cows had a 13% lower pregnancy rate compared with mature cows. These three-year-old cows also calved 30 days later in the calving season, indicating later breeding in the breeding season, compared with mature cows.

This preliminary data suggests early weaning of calves and fall supplementation is an effective means of increasing cow body weight and condition. However, decreased calf weaning weights were associated with early weaning. Spring protein supplementation reduced cow weight loss postpartum and increased calf weaning weights. Young postpartum cows exhibited lower fall pregnancy rates and later spring calving dates compared with mature cows. This study will continue for 3 more years.