

Effect of a stair-stepped growth regimen during gestation on performance of beef heifers - Postpartum lactation and calf performance

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J. Anim. Sci. 78(Suppl. 1):xx.

A stair-step growth regimen during hormone-sensitive growth phases prior to first parturition can affect mammary development and subsequent performance. Objective of this study were to determine the effect on growth performance and lactation potential of beef heifers reared on a simplified stair-step growth regimen imposed during gestation. Prepartum growth performance is reported in a companion abstract. Twenty gestating beef heifers were blocked by breeding sire and assigned to either a constant (C) or a stair-step (S; managed for a slow followed by a rapid growth rate) growth regimen for 18 wk immediately prepartum. Following the experimental phase, all heifers were managed similarly. Immediately prior to calving, C heifers had lower BW (492.4 vs 546.1 kg for C and S, respectively; $P < .01$) and body condition scores (BCS; 6.2 vs 7.0, $P = .06$) than S heifers. Calves from S heifers were born approximately 5 d earlier ($P = .01$), however birth weights (37.5 vs 36.7 kg; $P = .61$) did not differ. Three calves died at calving (1 C and 2 S), one (S) at 2 d of age and one (S) at 110 d of age. Neither milk production at 40 d postpartum (6.7 vs 6.3 kg/d; $P = .72$) nor milk composition ($P > .33$) in heifers with calves were affected by gestational treatment. Heifers and calves were moved to spring pastures at approximately 79 d postpartum. Heifers with calves had similar BW (458.8 vs 486.5 kg; $P = .14$) and BCS (6.0 vs 6.2; $P = .32$) at pasture turnout. Calves from S heifers (76.8 vs 84.7 kg; $P < .05$) were heavier, however average daily gains from birth to pasture turnout (1.00 vs 1.04 kg/d; $P = .41$) were not different. Calves were weaned at 234 d of age. Body weight (503.8 vs 536.9 kg; $P = .11$) and BCS (5.7 vs 5.9; $P = .61$) of heifers with calves were not different at weaning. At weaning, actual calf weight (264.3 vs 268.8 kg; $P = .66$), average daily gain (.98 vs .98 kg/d; $P = .98$) or weight per day of age (1.14 vs 1.13 kg/d; $P = .93$) were also not different due to gestational treatment. These data would suggest that a stair-step growth regimen during gestation resulted in earlier calving dates, but did not affect calf birth weight, milk production or subsequent calf growth in beef heifers.

Stair-step, Beef Heifer, Lactation



