

Effects of Weaning Date and Retained Ownership on Cattle Performance and Forage Disappearance in Spring Calving Beef Systems

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Weaning calves early from spring calving cows can have multiple impacts on beef production systems. The objective of this three-state study was to evaluate the effects of mid-August (AW) versus early-November weaning (NW) on cow and calf production traits and forage utilization. Three hundred-seventeen cow-calf pairs from the NDSU-Dickinson Research Extension Center (DREC; n=88), SDSU-Antelope Research Station (ANT; n=136) and the University of Wyoming Beef Unit (UW; n=93) were stratified by BW and body condition score (BCS) and assigned to either AW (calves weaned at approx. 140 d of age) or NW (calves weaned at approx. 215 d of age). Cows grazed native range between the two weaning dates. At AW date, a subset of cows from each treatment at DREC were randomly assigned to six 20-ha. pastures (three pastures/treatment) to measure biomass disappearance between AW and NW dates. Steer calves at ANT and DREC were weaned and backgrounded 7.3 wk and finished in a commercial feed yard. Steers at UW were backgrounded 42 d and finished on site. Treatment by location interactions were detected for cow BW change, BCS change, calf ADG, and gain:feed. At each location, AW cows lost less weight ($P<0.01$) between weaning dates than NW cows. Similarly, cow BCS change was improved ($P<0.01$) for AW vs. NW at DREC (0.39 and -1.20), ANT (0.34 and -0.02), and UW (-0.05 and -0.78). Forage biomass disappearance, between weaning dates, was reduced by 27.7% ($P=0.15$) when calves were AW. AW steers at DREC had higher ($P<0.01$) ADG during backgrounding than NW, and AW steers at DREC and ANT were more efficient ($P<0.01$) during backgrounding. During finishing, AW steers grew slower ($P<0.01$), were less efficient ($P<0.01$) at ANT, and overall were 31 days younger, but required 61 more days on feed to reach harvest endpoint. Weaning spring-born calves at 140 d compared to 215 d reduced forage utilization, improved cow BCS change, and resulted in similar calf performance.

Key Words: Early Weaning, Cow Performance, Forage Disappearance