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## Meat and Muscle Biology™



## Effects of Dam Age on Growth Performance and Carcass Measurement of Crossbred Steer Offspring

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### Objectives

Past research has reported that the most productive cows in a cow herd are approximately 6 yr old or older. A recent study reported that dam age affected pre-weaning performance of crossbred male calves, but had minimal effect on carcass traits when steers were finished to a common compositional endpoint over 3 yr. The purpose of this study was to evaluate the effect of dam age on Angus crossbred steer performance and carcass quality measurements over a 4-yr period.

### Materials and Methods

A total of 248 fall-calving, mixed-aged Angus and Angus- crossbred cows bred to Angus or Hereford sires were utilized to determine the effects of dam age on offspring performance and carcass traits. Dams were allocated into 1 of 4 age groups based on age at the time of calving: 1)  $\leq 3$  yr old (Age 3), 2) 4 to 6 yr old (Age 4 to 6), 3) 7 to 10 yr old (Age 7 to 10), and 4)  $> 11$  yr (Age 11+). Cattle were housed at the University of Arkansas' beef research unit with access to pastures. Calves were processed at birth and weaned in May. Dam age was not included in adjusted weaning weight (WW) because the effect of dam age was tested. For 2 mo after weaning, steers grazed at the farm and then transported to the West Texas A&M research feedlot, located in Canyon, Texas

and remained there until harvest. When steers reached a minimum 2.54 cm backfat thickness, they were transported to a meat processing plant in Friona, Texas to be harvested. Carcass data was collected for analysis.

### Results

Calves born to cows in group Age 11+ had increased ( $P < 0.05$ ) birth weight compared with the rest of the groups and Age 3 and Age 4 to 7 calves had decreased birth weight. Calves from Age 7 to 10 had increased adjusted WW than Age 3 and Age 4 to 6 ( $P < 0.05$ ). Steer carcass measurements (hot carcass weight, ribeye area, yield grade, backfat thickness and marbling) were not different regardless of cow age group. The Age 11+ had increased ( $P < 0.05$ ) percent kidney, pelvic and heart fat (%KPH) and similar to Age 3. Age 3 was similar in %KPH to Age 4 to 6 and Age 7 to 10. The percentage of steers grading choice, select, or prime did not differ between age groups.

### Conclusion

Dam age affected birth weight of crossbred male calves. Carcass traits and measurements were not affected by dam age except %KPH. Future research should investigate dam age on pure bred calves.