

ABSTRACT

Sire variation in fatty acid composition of crossbred Wagyu steers and heifers

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Effects of sires on lipid composition of subcutaneous adipose tissue and longissimus dorsi muscle were studied using 113 F1 heifer and steer calves sired by eight Wagyu bulls out of three different cow herds. Wagyu sires were used and grouped as Old (n=6) and New (n=2) sires, respectively, based on the chronological order in which they were imported into the US. Animals were fed a backgrounding diet for 112 days consisting of an 80:20 ratio of roughage:concentrate, then grazed on orchard grass and bluegrass for 84 days, and finished on a 10:90 ratio of roughage:concentrate diet for 231 days in a feedlot. For longissimus dorsi muscle, progeny from Old sires had higher ($P<0.05$) monounsaturated to saturated fatty acid ratios (MUFA:SFA) than progeny of New sires. There were also differences ($P<0.05$) among individual sires for polyunsaturated to saturated fatty acid ratio (PUFA:SFA) (0.05–0.08) and MUFA:SFA (1.03–1.21). Progeny of Angus cows at Washington State University (WSU) had lower ($P<0.05$) MUFA:SFA and lower SFA than progeny of WSU crossbred and commercial cows. Steers had lower ($P<0.05$) MUFA:SFA and higher ($P<0.05$) SFA than heifers. For subcutaneous fat, heifers had higher levels ($P<0.05$) of linoleic acid (C18:2) and PUFA:SFA than the steers. Means for ether extractable fat in longissimus dorsi muscle differed among sires ($P<0.05$) and ranged from 7.58 to 13.13%. Progeny from WSU Angus cows had higher ($P<0.05$) ether extractable fat than WSU crossbred and commercial cows. Cholesterol content of longissimus dorsi muscle was not influenced by sire, cow herd or sex ($P>0.05$).