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ABSTRACT

Genetic effects on fatty acid composition of carcass fat of Japanese Black Wagyu steers

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Two hundred ninety-three Japanese Black Wagyu steers derived from 34 sires were used to investigate genetic effects on the fatty acid composition of carcass fat. All steers were fed identical diets for 365 d and slaughtered at similar ages. If the percentage of genetic contribution of sire A, B, or C was not lower than 25%, steers were classified into groups A, B, and C, respectively. Fatty acid compositions differed depending on deposit sites. Mean percentage of monounsaturated fatty acids (MUFA) tended to be higher in the outer parts than in the inner parts of the body. Percentage of MUFA in carcass fat was negatively correlated with withers height and BW and positively correlated with meat quality score and marbling score. Fatty acid compositions of the 34 sire groups varied, and mean percentages of MUFA in i.m. fat ranged from 47.71 to 54.77%. Steers in the C group grew larger than those in the A or B group. Mean percentages of MUFA for i.m. fat in the A, B, and C groups (52.83, 51.88, and 50.33%, respectively) differed ($P < 0.05$) from each other. Steers in the C group had higher ($P < 0.05$) percentages of saturated fatty acids than those in the A or B groups. Percentages of genetic contribution of sires B ($P < 0.05$) and C ($P < 0.001$) were negatively correlated with percentage of MUFA in i.m. fat. These results suggested that genetic factors affected fatty acid composition of carcass fat in Japanese Black Wagyu cattle and that some sires had potent genetic factors affecting this composition.

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