

ABSTRACT

The Relationships between Muscle Fiber Characteristics, Intramuscular Fat Content, and Fatty Acid Compositions in *M. longissimus lumborum* of Hanwoo Steers.

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The objective of this study was to investigate the relationship between muscle fiber characteristics, intramuscular fat (IMF) content, and fatty acids composition in *longissimus lumborum* (LL) muscle from Hanwoo steers. The LL muscles were obtained from four quality grades (QG) carcasses and subjected to histochemical analysis. There were significant ($p<0.05$) differences in fiber number percentage (FNP) and fiber area percentage (FAP) of muscle fiber types among muscles from four QGs. Both FNP and FAP of type I increased while those of type IIB decreased with increasing QG from QG 2 to QG 1⁺⁺ ($p<0.05$). Also, with increasing QG, the saturated fatty acid (SFA) proportion decreased while monounsaturated fatty acid (MUFA) increased significantly ($p<0.05$). IMF content was positively correlated with both FNP and FAP of type I, but negatively correlated with those of type IIB. The proportions of SFA and MUFA were significantly ($p<0.001$) correlated with both type I and IIB composition. These results implied that muscle fiber type composition is an important factor influencing fatty acid composition in LL muscle of Hanwoo steer.

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