

ABSTRACT

The relationship between muscle fiber characteristics and meat quality traits of highly marbled Hanwoo (Korean native cattle) steers.

Hwang YH¹, Kim GD, Jeong JY, Hur SJ, Joo ST.

¹ Division of Applied Life Science, Gyeongsang National University, Jinju, Gyeongnam 660-701, Republic of Korea.

To investigate the relationships between muscle fiber characteristics and meat quality traits of Korean native cattle, Hanwoo, Longissimus dorsi (LD), Psoas major (PM) and Semimembranosus (SM) muscles obtained from 18 Hanwoo steers and the muscle fiber characteristics were measured by histochemical analysis. Fiber number, area percentages and density of type IIA and IIB were lower in SM muscle, but higher in PM muscle than other muscles. LD muscle had higher pH(24h), L* value and fat content whereas SM muscle had lower L* value and fat content. The lowest WBSF with longer sarcomere length was observed in PM muscle, while SM muscle showed the highest WBSF with shorter sarcomere length. Consequently, the percentage of type I and IIB were highly correlated with meat quality traits and inversely correlated with fat content, L* value and WBSF. Fiber number and area percentage of type I had a positive correlation with fat content and L* value and a negative correlation with WBSF. These results suggest that Hanwoo steers had high marbling, more lightness and tenderness when the percentage of type I was high and the percentage of type IIB was low in muscle.

END