

## ABSTRACT

### **Effects of quality grade on the chemical, physical and sensory characteristics of Hanwoo (Korean native cattle) beef**

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The effects of quality grade (which reflects relative marbling) on the chemical, physical and sensory properties was investigated using Korean native cattle (Hanwoo) beef. Thirty-six Hanwoo cows were slaughtered and the carcasses were graded at 24h postmortem according to the Korean carcass grading system. The quality grade 1 (high quality), grade 2 and grade 3 (low quality) were based on the marbling score of longissimus dorsi (LD) muscles. The effects of quality grade on the meat quality parameters of beef LD muscle were assessed during aging. Loin-eye area, fat thickness and yield grade were all similar for the three quality groups. Mean lean color, fat color and maturity scores did not differ among quality grade groups ( $P>0.05$ ). pH, Sarcomere length, WHC, collagen content, cooking loss, shear force and MFI were not affected by quality grade groups. Drip loss for grade 1 group was significantly lower than that for grade 3 groups ( $P<0.05$ ). At initial tenderness evaluation of steaks, no differences among the three grades were observed; however, with additional days of storage, grade 1 steaks had higher tenderness score than grade 3 steaks ( $P<0.05$ ). Increased postmortem aging time improved tenderness attributes regardless of quality groups. No significant differences were found among the quality grade groups for flavor ( $P>0.05$ ). The grade 1 group had the highest juiciness score, and grade 3 groups had the lowest score ( $P<0.05$ ), but postmortem aging did not influence flavor and juiciness. The quality grades were more strongly related to juiciness than tenderness or flavor.