

## ABSTRACT

### **The relationship of physiological maturity and marbling judged according to Korean grading system to meat quality traits of Hanwoo beef females**

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Fifty seven carcasses from Hanwoo beef females were randomly selected by official meat graders and were sorted into three levels of maturity and marbling. Carcass data was collected for back fat thickness, longissimus area, carcass weight, meat colour, fat colour, marbling score, yield and quality grades. Mature carcasses had more yellow fat, coarser texture, a larger longissimus muscle area and lower quality grades and marbling scores ( $P < 0.05$ ). Carcasses with a higher marbling score had thicker fat and a higher quality grade. Carcasses with low marbling had a higher yield grade and a coarser texture ( $P < 0.05$ ). Higher marbling scores corresponded with lower cook and drip loss values for longissimus steaks. As the maturity of carcass was increased, the redness and lightness of meat and the yellowness of fat all tended to increase. Tenderness, flavour and overall acceptability scores for the older maturity group were lower than for younger and intermediate groups. Marbling was significantly ( $P < 0.01$ ) correlated with quality grade, crude fat content, cook and drip losses, and Warner-Bratzler shear force. The maturity level was also significantly ( $P < 0.01$ ) correlated with quality grade, fat colour, texture score, number of calves produced and milk teeth, meat redness and yellowness, fat yellowness, and Warner-Bratzler shear force. Results indicate that a low marbling group and older maturity group based on Korean grading system could negatively influence carcass traits and beef qualities of Hanwoo beef female.