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ABSTRACT BOOK

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EFFECTS OF SLAUGHTER WEIGHT AND GENDER ON MEAT QUALITY OF LIGHT LAMBS

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Forty eight lambs were used to investigate the effects of slaughter weight (low=17-19 kg, medium=21-23 kg, high=25-27 kg) and gender (male or female) on meat quality characteristics of Kivircik lambs. Lambs were taken to pasture in the day-time with their dams after they were 57-d old until slaughter. At night, lambs and their dams were kept in different pens and lambs were fed ad-libitum with good quality alfalfa hay and concentrate feed. Lambs were weighed at weekly basis during the finishing period. Lambs, which reached the target finish weight at weekly weightings, were taken to the experimental slaughterhouse of Istanbul University Veterinary Faculty. Longissimus dorsi muscle from the right side of carcasses were used in order to assess meat quality characteristics.

Lambs from high weight group had lower ultimate pH value than those of other groups ($P<0.001$). Meat of low weight group had higher cooking loss ($P<0.01$) and Warner Bratzler shear force value than those of other groups. Meat of lambs from high weight group were darker in colour with lower lightness (L*) value at immediately after cutting ($P<0.001$), 1 h ($P<0.001$) and 24 h ($P<0.05$) after cutting. Meat of low weight group had lower proportion of total saturated fatty acids ($\sum$SFA), and higher proportion of total unsaturated fatty acids ($\sum$UFA) and $\sum$UFA /$\sum$SFA ratio than medium weight group. Meat of medium weight group had higher thrombogenic index than that of low weight group.

Female lambs had lower ultimate pH value than that of male ones ($P<0.01$). Meat of female lambs were also more tender than male lambs regarding the results of Warner Bratzler shear force analyses. Gender had no significant influence on meat lightness value. However, meat of male lambs had lower redness value at immediately after cutting and 24 h after cutting ($P<0.05$). Meat of female lambs had higher proportions of C18:3 n-3 and C20:1 than male lambs. On the contrary, meat of male lambs had higher proportions of C20:5 n-3 and C22:0.

In conclusion, in the conditions of the current study, lambs slaughtered in high group had lower meat lightness value than other weight groups, however, meat colour values in all slaughter weight groups might be considered as acceptable at consumer level. Slaughtering the lambs in low weight yielded tougher meat. Female lambs produced higher quality meat than male lambs in terms of ultimate meat pH, shear force value, meat redness, proportions of C18:3 n-3, and C20:1.