The effect of carcass weight on fatness and muscle and fat color of male Ojinegra de Teruel light lambs

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 This study aimed to evaluate the effects of increases in lamb carcass weight in 1 kg steps from 8 to 11 kg on carcass fatness, muscle color, subcutaneous and renal fat color, tissue composition of the thoracic limb, and intramuscular fatty-acid composition. Sixty-two carcasses from Ojinegra de Teruel male lambs fed concentrates ad libitum and barley straw were used. Both carcass scores and renal fat weight increased with carcass weight ($P = 0.0001$), but the percentage increase in renal fat weight was twice that of fat scores. Renal fat was prone to store carotenoids earlier than caudal fat, resulting in increased chroma. With increasing carcass weight, muscle color became less light (decreased L* ($P = 0.0001$) and an increased in chroma scores ($P = 0.001$). Increments of 1 kg of carcass weight led to noticeable changes in the rectus abdominis color, except at the increment from 10 kg to 11 kg. Slaughtering lambs at light weights was found to be advisable because renal fat is not a valuable part of the carcass. The lean percentage of the thoracic limb did not increase with carcass weight, as the increased muscle:bone ratio ($P = 0.0001$) was offset by an increased fat percentage (especially the intermuscular fat %). Changes with increasing carcass weight in the proportions of the main fatty acids in intramuscular fat were small. Moreover, intramuscular fat did not change in quantity or quality. However, when selling carcasses at heavier weights is preferred, achieving carcasses of 11 kg rather than 10 kg was found to be advisable because the deposition of fat in both was similar. Breeds that deposit fat earlier than the breed used in this study should be fed low-energy diets to improve carcass quality. This feeding strategy could also be considered if fat deposition differs between sexes.

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