

Effects of lamb genotypes and carcass weight on primal cuts tissues distribution

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The availability of fresh lamb on the Portuguese market is highly seasonal with little supply outside Easter and Christmas seasons. Outside these periods some demand is maintained in retail chains but mainly for primary primal cuts. Knowing the proportion of the various tissues of the less valued primal cuts is one way to enhance them for the meat industry. The aim of this study was to evaluate the effect of lamb genetics and carcass weight in the proportion of tissues components. Two groups of pure Merino Branco (MB) and two groups of Ile-France x Merino Branco (IFxM) crossbreed lambs, with 15 to 20 lambs each. All lambs grazed natural pastures together with their dams until weaning (three months of age) and were supplemented with commercial concentrate and hay. Low weight groups of different genotypes were slaughtered on average at four months of age and the others two months later, to provide light (LC) (MB 12.5 kg; IFxM 13.5 kg) and heavy carcasses (HC) (MB 15.0 kg; IFxM 17.0 kg), respectively. Shoulder, breast, and neck primal cuts were individually vacuum packed, deep-frozen and sent to laboratory to be carefully dissected into muscle, bone, intermuscular, and subcutaneous fat tissues. Genotype influenced intermuscular fat content ($p < 0.001$), with 11.3% in IFxM and 9.1% in *Merino* cuts. The muscle tissue content was neither affected by genetics nor by carcass weight, but its interaction was highly significant ($p < 0.001$). The fat tissues suffered the biggest influence of the increase on carcasses weight, presenting the heaviest always higher values ($P < 0.001$). Subcutaneous fat increased from 4.21% (LC) to 6.69% (WC), intermuscular fat from 8.85% (LC) to 11.52% (WC), and total fat content from 13.06% (LC) to 18.21% (HC). Muscle content was higher in shoulder (63.3%), followed by neck (54.9%) and breast (50.9%). The highest fat content was found in the breast (22.0%), however no differences were found for total and intermuscular fat between shoulder and neck. Finally, the greatest differences in tissues proportion were found among the three primal cuts.

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