

Nutritional composition of less valued primal cuts from lamb genotypes

F.P. Esteves¹, C. Oliveira², M. Pimpão², J. Santos-Silva^{2,3}, O. Moreira^{2,3} and J.M. Almeida^{2,3}

¹UEvora - Universidade de Évora, 7006-554 Évora, Portugal

²INIAV - Quinta da Fonte Boa, 2005-048 Vale de Santarém, Portugal; joaoalmeida@iniav.pt

³CIISA-FMV, Universidade de Lisboa, Av. Universidade Técnica, 1300-477 Lisboa, Portugal

The production and consumption of low-weight lamb depends on various socio-economic and cultural factors. Since lambs' less valued primal cuts may be more difficult to prepare, one way to promote them on the market could be through the assessment of their nutritional composition. The aim of this study was to evaluate the proximate and fatty acid (FA) composition of three less valued retail chains primal cuts - shoulder, breast, and neck from three lambs' genotypes. Two Portuguese pure breeds, Merino Branco (MB) and Saloia (S), and a commercial Ile France x Merino Branco (IFxM) crossbreed received the same farm management and were slaughtered at four months of age. Lambs' genetics significantly affected all proximate parameters (humidity, fat, protein, and ash). Meat from IFxM had the highest protein content (20.14%; $p < 0.001$). Moreover, IFxM had the lowest fat content (5.43%; $p < 0.001$), when compared to Saloia (6.74%) and Merino (8.65%). Primal cuts also influenced all proximal contents ($p < 0.001$), with only a 0.52% protein variation between the breast (18.96%) and the shoulder (19.48%). This cut was the one with the lowest fat content (4.88%) compared to neck (7.38%; more 50% fat) and breast (8.55%). Fatty acid composition (% total FA) of intramuscular fat was highly influenced by lamb genetic ($p < 0.001$), with significant differences in 22 out of the 23 FA evaluated. Primal cut effect was only significant in seven FA and there was no significant interaction between main effects. The FA obtained in highest amounts for all breeds were C18:1c9, C16:0, C18:0 and C14:0. Saturated FA (SFA) concentrations were significantly different across crossbreeds ($p < 0.001$), with Saloia having the lowest levels of SFA (45.4%) when compared to Merino (50.3%), and IFxM (53.4%). Regarding the content of monounsaturated FA (MUFA), Saloia presented the highest concentration (47.9%), followed by Merino (42.9%) and IFxM (37.9%). Our findings show that crossbreed is an important factor in the nutritional composition of less valued lamb primal cuts.

Funding: Project: PDR2020-101-031690 Child Lamb.