

Effects of lamb genotype and primal cuts on burgers' texture and sensory properties

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Lambs' low slaughter weight, and thus, light carcasses are characteristic of Portuguese market. Such carcasses present lower muscle volume and high bone, and some primal cuts require laborious home preparation. Accordingly, lamb meat is appreciated due to its low fat and connective tissue content. The aim of this study was to evaluate the effects of lamb genotype and embedding ratio of meat from lesser economic value primal cuts on textural and sensory properties, and how it determines the overall acceptability of lamb burgers. Two groups of lambs, pure Merino Branco (MB) and Ile France x Merino Branco (IFxM) crossbreeding, received the same management at the farm and were slaughtered at four months of age. Lean meat from shoulder, breast and neck primal cuts were separately minced (\varnothing 3.5mm), and a standard recipe was established for burgers consisting of meat (88%), water (10%), flavourings, and salt (0.75%). Three formulations were made with different proportions of meat: 40:30:30, 50:25:25 and 60:20:20, corresponding to shoulder, breast, and neck, respectively. Texture profile analysis was carried out on grilled burgers, and sensory evaluation was made by an expert panel on grilled and roasted burgers. Lambs crossbreed influenced ($P<0.001$) hardness, chewiness, and gumminess of burgers, with higher values from IFxM lambs. The proportion of meat from the three primal cuts significantly influenced all the texture profile parameters. Burgers with equal proportion of meat from shoulder as well as breast + neck (50:25:25) originated the lowest values ($P<0.001$) of all texture parameters. Juiciness and tenderness were not influenced by any factor. Meat from Merino lambs promotes burgers with higher flavour intensity (5.01 vs 4.36; $P<0.001$). Grilled vs roasted method, didn't affect any of the sensory properties. Interaction between genetics and meat from primal cuts revealed that five out of the six formulations didn't differ in flavour or global acceptability and that Merino burgers had the highest, thus the best, sensory scores.

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