Effect of swine immunocastration on salts and volatile compounds of Teruel dry-cured hams

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Two experiments were carried out to evaluate the effect of immunocastration (immunization against GnRH) on the quality of Teruel dry-cured hams, proceeding from (Landrace × Large White) × Duroc pigs slaughtered around 135 kg. In the first trial, 20 hams from entire and immunocastrated gilts (EG; IG) were compared (n=10) and, in the second one, 14 hams from surgically castrated and immunocastrated males (SCM; ICM) were tested (n=7). All pigs, carcasses and hams had received the same management at farm, slaughterhouse and cellar. Once hams were cured (19 months), concentrations of sodium chloride, potassium nitrate, sodium nitrite, α-tocopherol, γ-tocopherol, δ-tocopherol, retinol, cholesterol and volatile compounds were measured in the *Biceps femoris* muscle. Data were analysed using the GLM procedure of SAS. In the first trial, IG presented greater ($P<0.05$) sodium chloride and sodium nitrite concentrations than EG, being in all cases normal values for this kind of product. About volatile compounds, IG presented lower ($P<0.05$) proportion of alcohols and furans, having both groups little influence on ham flavour. However, the 1-octen-3-ol alcohol and the 2-pentylfuran furan were also lower ($P<0.05$) in IG, which could imply lower mushroom and rancid notes and lower pleasant fruit and flower scents. In the second trial, ICM had lower ($P<0.05$) potassium nitrate and retinol concentrations than SCM. Also, ICM showed lower ($P<0.05$) percentage of alcohols (including 1-octen-3-ol) and sulphur compounds than SCM. This last group plays an important role in meat flavour and causes an unpleasant strong odour. Besides, ICM showed higher ($P=0.012$) proportion of acids, which are associated with fatty and cheesy notes. It can be concluded that immunocastration produced hams with more salt and nitrites in gilts and less nitrates and retinol levels in males. Besides, immunocastration affected some volatile compounds, which could have some influence on ham flavour. Project funded by MINECO (AGL2016-78532-R) and by Gobierno de Aragón (FITE and FEDER).