

**Chemical composition, colour, oxidative and sensory attributes evaluation of national and imported hams**

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The overall quality and the organoleptic attributes of the dry-cured ham are mainly correlated to meat origin. The aim of the present study was to assess the influence of meat origin on chemical composition and final sensory characteristics of dry-cured hams. Samples of national (NH) and imported (IH) hams (slices 2 cm thick, in double) were collected from a dry-cured ham making enterprise located in Viterbo (Italy) at 0 (fresh thighs), 8, 65, 120 and 210 days (marketable product). Moisture, pH, protein, lipids, ash, texture, colour, thiobarbituric acid reactive species (TBARs) and sensory profile were investigated. For some chemical parameters, Near Infrared Reflectance predictive PLS models were also developed. Data were analyzed using the GLM procedure of Statistica 7 (StatSoft Inc., USA); differences were declared significant at  $P < 0.05$ . Chemical characterization and colour at different time of seasoning did not show difference between NH and IH samples apart for pH with IH samples always below the respective NH ones. I dry-cured hams were softer than NH ones. Aromatic profiling of dry-cured hams outlined a higher prevalence of aldehydic components in NH than in IH samples, the latter showing a slight but significant major content of TBARs. Sensorial evaluation by expert sensory assessors (ISO 5492) (experts) assigned a higher value of preference to the N seasoned hams than the I ones. NIR spectra was not sufficient different to discriminate N vs. I samples although good predictive PLS models were developed and cross-validated for water activity (RMSECV=0.007,  $R^2=0.97$ ), ash% (RMSECV=0.68,  $R^2=0.96$ ) and pH (RMSECV=0.05,  $R^2=0.91$ ). The origin of meat influences several volatile compounds and numerous sensory attributes of dry-cured hams with implications on overall quality of marketable products.

**Number of myofibers increases from birth to weaning in pigs**

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Currently, it is believed that total number of muscle fibers (TNF) is fixed at birth. However, there are indications that at birth between primary (P) and secondary (S) fibers very-small diameter fibers containing embryonic and fetal myosin heavy chain isoforms exist. They represent a different population of myotubes, designated tertiary myotubes and might contribute to hyperplastic growth after birth. The goal of the study was to establish if TNF changes from birth to weaning. For the trial 8 pairs of female littermates with a similar birth weight ( $1.41 \pm 0.113$  kg;  $P=0.82$ ) were used. One piglet of each pair was sacrificed either at birth or at weaning at d 28 of age (BW:  $6.93 \pm 0.527$  kg). Subsequently, internal organs and the semitendinosus (ST) muscles were collected and weighed. Histological analyses were performed on the ST using the mATPase staining procedure after pre-incubation at pH 10.2. This allowed identifying the muscle cross-sectional area, TNF, number of P and S fibers and the S/P ratio of the dark (STD) and the TNF of the light (STL) portion of the ST. Relative to slaughter weight, the spleen and ST were 90 and 26% heavier ( $P < 0.01$ ), respectively, whereas lungs, liver, heart and kidneys were 17, 16, 30 and 24% lighter ( $P < 0.06$ ) at weaning than at birth. From birth to d 28 of age TNF increased in the STD (151,020 vs. 235,191;  $P < 0.01$ ) but not in the STL (395,497 vs. 405,836;  $P=0.83$ ). The increase resulted from both a greater number of P (4,597 vs. 6,605;  $P < 0.01$ ) and S fibers (146,423 vs. 228,586;  $P < 0.01$ ) with no changes in the S/P ratio (32 vs. 35;  $P=0.25$ ). Overall the TNF of the ST was only numerically greater (546,517 vs. 641,028;  $P=0.13$ ) in weaned than newborn piglets. This preliminary data suggest that the TNF of parts of muscles are not fixed at birth.