

**Breed and sex effect on pork meat quality**

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This work had as objective to evaluate the physical-chemical and sensory quality of two categories of pork meat from, a commercial meat pork and a selected meat from the Portuguese black pork (Preto Alentejano breed). The Preto Alentejano is a local non improved swine breed which survived during the last years owing to a demand increasing of Iberian products and the protection of origin designation products. Commercial pig breeds have great prolificacy and precocity, raised purely on an intensive way, using a more advanced technology that translates into a possible improvement in terms of carcass yield. Sixteen animals were used, 4 females and 4 males from each breed. Animals had 80-100 kg of live weight. The longissimus muscle between the 5th thoracic vertebra and the 10th lumbar vertebra was used in the analysis. Regarding meat physical-chemical quality, samples were analyzed for protein, fat, pigments, ashes, dried materials, water-holding capacity, and texture. Results of fat and pigments contents indicate significant differences for all treatments. For protein, ashes, dried materials, water-holding capacity and texture no significant differences were found. In the analysis of fatty acids composition, ten were detected, being the main ones C16:0, C18:0, C16:1, C18:1, C18:2. There was a predominance of monounsaturated fatty acids, followed by saturated and polyunsaturated. Differences were significant for sex and breed. Preto Alentejano breed and females presented the higher percentages of saturated and monounsaturated fatty acids. The taste panel found differences, mainly between breeds. The panellists scored Preto Alentejano meat as being juicier, more tender, with richer taste and more acceptable than Commercial meat. The higher juiciness score of Preto Alentejano meat were probably attributable to the higher intramuscular fat content compared to Commercial meat. The Commercial pork was characterized mainly by high toughness.

**Outputs and economic assessment of RFID technology and molecular biology (STRs) as innovative tools for traceability and origin protection in 'Suinetto di Sardegna'**

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The suckling piglet is a typical meat product of Sardinia, resulting from the traditional regional breeding of Swine within a scattered value chain (9.17% of national production). About 9,300 small family-run farms rear a limited number of sows that give birth to piglets bred into a strictly traditional farming practice. Piglets are normally slaughtered around one month of age: whole or half carcasses are the usual ways the product is presented to consumers on the market. Beyond retailers, the suckling piglets meat supplies also agritourisms and restaurants for typical dishes and local specialties. This product is highly appreciated both by local and foreign consumers for meat grilled following the traditional recipe and the added value due to the typical farming practice. Potentials of such production may lead the suckling piglet meat to achieve 'a niche' within the market: in this light, it needs to be protected from frequent commercial frauds, by importers who pass foreign pork meat off as local products. In previous work, safety, efficacy and efficiency for piglets identification and traceability of products from farm to slaughterhouse were tested within the suckling piglet of Sardinia: a total of 355 suckling piglets from 6 farms were electronically identified (injectable transponders HDX 32.5×3.8 mm, 134.2 kHz) and double-sampled *in vivo* and post mortem for a 6 microsatellites (FAO/ISAG panel) PCR on DNA from auricle tissue. EID showed: accidents (2.54%); deaths (0.56%); *in vivo* transponder readability 99.15%; post mortem readability 100%; reader reliability 99.93%; transponder recovery at abattoir 99.15%. The DNA analysis on 42 random animals showed: amplifications anomalies (10.7%); none no-identity. The economic assessment of the integrated system RFID+STRs showed a 27.1% of total costs/carcass produced.