

Physical characteristics of *Longissimus lumborum* muscle of “Sarda” and “Nero Siciliano” pigs reared outdoor. Preliminary results

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ABSTRACT

It is known that the sensory properties, i.e. smell, taste, colour, juiciness, texture and tenderness represent the principal factors able to condition drastically the choices of the consumers at the moment of purchase, therefore, they have a role of primary importance regarding the qualification of the product. The physical characteristics of the meat are influenced by different factors such as: age, sex, breed, breeding system and transport, slaughtering and ripeness; the aim of this study was to evaluate some physical characteristics of pig meat derived from two different autochthonous Italian genetic types. The trial was carried out on 30 castrated males pigs, 15 Sarda and 15 Nero Siciliano, reared outdoor respectively in the Ogliastra (Sardinia-Italy) and in the Nebrodi (Sicily-Italy) mountain area at 550±50 m above sea level. Animals fed spontaneous fruits, acorn principally, of undergrowth variable in relation to the seasons. In March 2006, at the age of 2 years and live weight of 106.4±4.2 kg for the Sarda and 107.2±3.6 kg for the Nero Siciliano, the pigs were slaughtered. At 45' *post mortem* the pH₁ value of each half-carcass was determined (Hanna Instrument HI 9023). After 24 hours of refrigeration at 4° C from the right half-carcass of each animal, one sample of *Longissimus lumborum* muscle (L2-L5) was taken and the pH_u, Colour (CIEL*a*b* system; Minolta CR – 400), Cooking loss and Warner-Bratzler shear force (INSTRON 5542) analysed. Data were subjected to the statistical analysis of variance by the GLM procedure of SAS. The pH₁ (Sarda 6.07 vs. Nero Siciliano 6.06; P=0.29) and pH_u (Sarda 5.98 vs. Nero Siciliano 5.45; P=0.06) values indicate a bad progress of meat acidification for the Sarda pigs; this could be due to the typical extensive breeding system of these animals, therefore to the difficulties of their capture and transportation to the slaughterhouse. Significant differences were observed for the colour parameters of the meat with the lowest values of L* (Sarda 39.91 vs. Nero Siciliano 50.88; P=0.001), a* (Sarda 11.21 vs. Nero Siciliano 15.70; P=0.001), b* (Sarda 4.03 vs. Nero Siciliano 4.63; P=0.031) and Chroma (Sarda 11.85 vs. Nero Siciliano 16.39; P=0.001) in the Sarda pigs; these data are related to the highest pH_u values. The Cooking loss has shown no significant differences between two genetic types (Sarda 27.79% vs. Nero Siciliano 27.80%; P=0.50). As regards the tenderness, the values of WBS (Sarda 4.29 kg f/cm² vs. Nero Siciliano 3.57 kg f/cm²; P=0.02) were significantly lowest in the meat of Nero Siciliano pigs, in relation to the best acidification of the muscle of these animals, testifying a meat more tender than that of Sarda pigs. Data show that, for improving the meat quality and its aptitude to the transformation, it need to modify, at least during the finishing period, the breeding system of these autochthonous pigs in a “plein air” system.

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