

## Boar taint masking on marinade injected meat

Elvira Zapata<sup>1</sup>, Irene Peñaranda<sup>1</sup>, Macarena Egea<sup>1</sup>, Celia Iniesta<sup>1</sup>, Núria Panella-Riera<sup>2</sup>, Maria Font-i-Furnols<sup>2</sup>, M. Belén López<sup>1</sup>, M. Belén Linares<sup>1</sup>, M. Dolores Garrido<sup>1</sup>

<sup>1</sup> UMU, Food Science and Technology, Faculty of Veterinary, University of Murcia, Campus Universitario Espinardo, 30100 Murcia, Spain

<sup>2</sup> IRTA, Food Quality and Technology Program, Finca Camps i Armet s/n, E-17121 Monells, Barcelona, Spain

**Introduction:** Surgical castration of piglets has been a common practice in many EU countries. This practice has several functions. One of them is to prevent the presence of unpleasant odours and flavours in the meat from non-castrated pigs (Corral, Salvador & Flores, 2016). However, in recent years, some regulations from the EU have been modified establishing new recommendations in order to achieve its progressive elimination. An alternative to surgical castration is the production of entire male pigs. Nevertheless, the quality of this meat could be affected by the presence of boar taint, which is mainly associated with two compounds that can be accumulated in the adipose tissue: androstenone (AND) and skatole (SKA) (Borrisser-Paró et al., 2014). The main objective is to develop a spiced marinade in order to improve sensory quality of entire male pork.

**Material and methods:** *Longissimus thoracis et lumborum* muscles from castrated and entire male pigs were used. The pork samples had androstenone levels of 5.51 ppm and skatole of 0.73 ppm, analyzed by HPLC-GC. Two formulations of marinade injections were tested on both castrated (C1 and C2) and entire pork (E1 and E2). Six meat pieces, which weight was 300 grams, were injected for both mixtures of spices (M1 and M2) and meat (C and E). The pieces were injected with 60 ml of marinade mixture, based on wine and other ingredients, including some spices that masking the boar taint.

The sensory analysis was carried out by panellists with experience in the profile assessment of meat products according to the Regulation UNE-ISO 4121:2006. For this analysis, 1 cm thick pork loin fillets were used, cooked by frying. A quantitative descriptive analysis (QDA) with 20 attributes of colour, flavour and texture on an unstructured scale of 10 cm was carried out. Anova and Tukey tests were performed using SPSS 21.

**Results:** No differences were found in the results of colour, brightness, homogeneity, meat /sour / boar / spicy odour, salty and anomaly flavour. However, the meat samples from castrated pigs injected with mix 1 had a red colour due to the use of paprika. The perception of boar flavour was higher in samples from entire pigs injected with mixture 2, which suggests a reformulation of this mixture. Finally, the hardness and chewiness values were higher in the meat samples from entire male pigs, which is likely due to the hardness of the raw material. In addition, the juiciness values were higher in the meat samples from castrated pigs, which has an inverse relationship with hardness and chewiness. Apart from the boar taint presence, the meat from entire male pigs can exhibit other problems that reduce the meat quality, for instance, lower adiposity, differences in water holding capacity and higher meat toughness (Candek-Potokar, M. et al., 2015).

**Conclusion:** The injection of the meat pieces from castrated and entire male pigs with both mixtures for marinade based on white wine and spices obtained adequate values in most of the evaluated attributes. Nevertheless, due to the presence of some high values in some attributes, such as bitter taste or boar flavour, the possibility of making changes in the formulation of the spice mixtures arises.

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