Breed differences on sensory characteristics of sheep meat by a taste panel

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Introduction

- Request for quality control of meat

Objective

Determine differences between Churra Galega Bragançana Branca (CGBB) and Churra Galega Bragançana Preta (CGBP) breeds meat

- Portuguese autochthonous breeds
  - CGBB meat has a PDO protection (Regulation EU nº1151/2012).

Material and Methods

Lamb loin

3 different finishing levels

- Poor
- Medium
- High

CGBB and CGBP breeds

Differences assessed by a qualified for meat products taste panel with 9 elements plus an unqualified taster

A triangular test was used according to ISO 4129:2004.

- Two identical samples and a different one, the experts being obliged to indicate which sample was different and why.

Material and Methods

Loin samples separated from the vertebrae, wrapped in aluminium foil and duly encoded.

Samples placed in a conventional oven and cooked until reaching the temperature of 80°C in their thermal centre.

Material and Methods

- After confection, the loins were cut into portions with an average thickness of 1 cm, wrapped in foil and duly coded.

Material and Methods

- Each expert was provided with a triad corresponding to meat samples from the two breeds of the same treatment.

- The procedure was performed three times to test the three treatments of the study.

- Three replicates of the procedure were performed to test all available samples.

Statistical analysis

- Triangular test – Stardard ISO 4120:2004
  - Table A.1 – Minimum number of correct responses needed to conclude that a perceptible difference exists based on a triangle test (based on the binomial distribution)
  - 90 tests
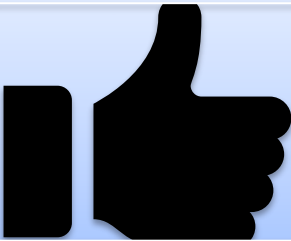 - 30 per finishing level

Results

10 experts participating in the trial performed 90 triangular tests for the difference

In 53 of the answers, the experts correctly identified the different sample

The proportion of assertive answers allows concluding that in the tasting of *longissimus dorsi* the two breeds are differentiable with a level of significance of 0.1%

Results

- This differentiation occurred for higher finishing levels, and no significant differences were detected when the degree of finishing was weaker
  - 14 poor finishing
  - 19 medium finishing
  - 20 high finishing

Results

Samples were differentiated by:

- Juiciness
- Hardness
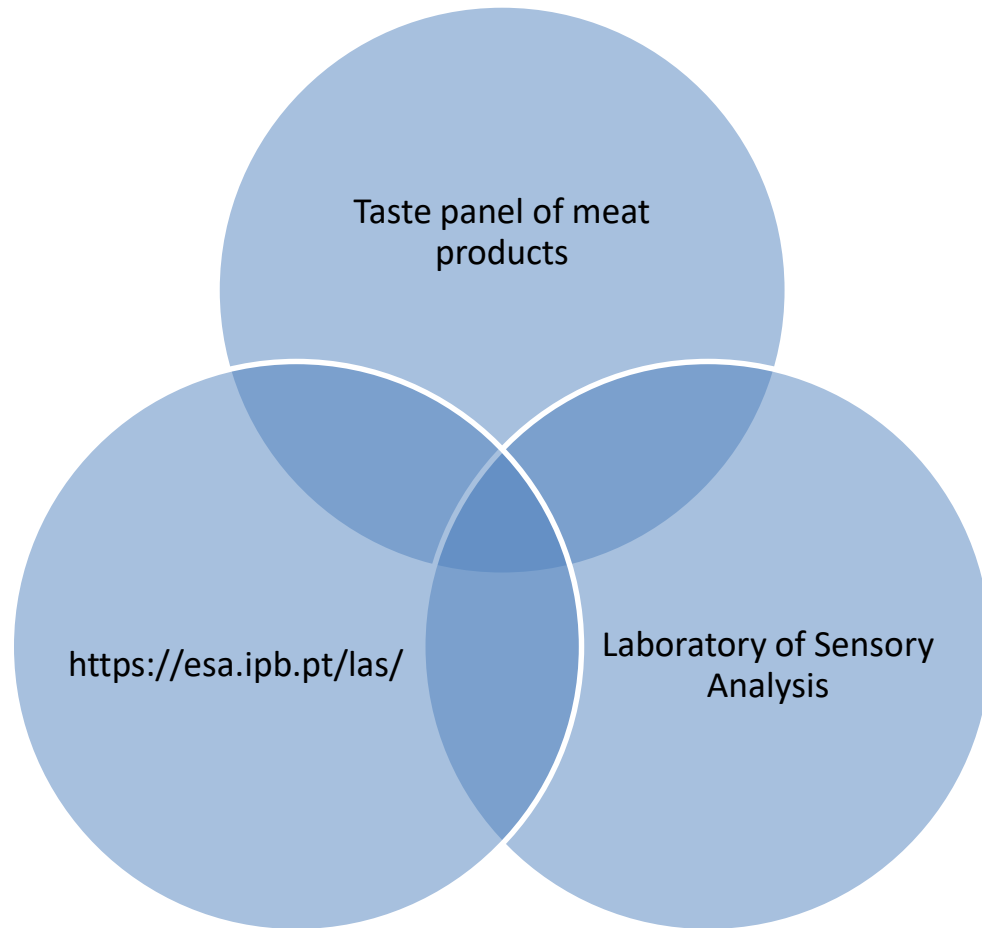- Flavour
- Colour (in less cases)

Conclusions

Breeds are differentiable

Particularly at higher weights

Acknowledgements

Thank you for your attention