Consumers’ study on traditional pork products from local breeds: expectations and hedonic evaluation

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Assessing consumers’ acceptability of traditional pork products (TPP) from local pig breeds is essential to ensure sustainability of regional pork chains. As part of TREASURE* project, expectations and hedonic perception of Protected Designation of Origin (PDO) Noir de Bigorre (NB) dry-cured ham produced from pure Gascon breed were assessed. The study was conducted in Toulouse (France) as an expanding market for TPP with 124 consumers, regular purchasers of TPP (quota sampling method).

Three products were used, described as follows: “NB-PDO dry-cured ham 24 months ripening – local pig breed in extensive system” (NB24), “NB-PDO dry-cured ham 36 months ripening – local pig breed in extensive system” (NB36) as innovative TPP to enhance sensory quality, and “Iberian ham – 50% Iberian pig” (IB) as competing product. Following the expectation disconfirmation theory, the sensory test included three phases: blind (tasting without information), expected (product description only: no tasting) and actual liking (tasting with information), assessed using a 9-point scale from 1: extremely dislike to 9: extremely like. Data were submitted to ANOVA (mixed model).

Blind hedonic test showed no differences (P>0.05) between products that all displayed high liking score (6.7 to 6.8). Product description strongly influenced expected liking (P<0.001) with higher score for NB36 than NB24 (7.8 vs 7.2, P<0.05) and lowest score for IB (5.2). Hedonic test with information showed higher actual liking for NB36 and NB24, that were similar, than for IB (7.4 and 7.2 vs 5.9, P<0.001). Both NB hams displayed higher actual than blind liking (P<0.05), denoting positive effect of information on acceptability. Actual liking was similar to expected for NB24, indicating fulfillment of hedonic expectations. By contrast, actual liking was lower than blind for IB (P<0.05). Results will be completed with consumer preferences and willingness to pay for TPP and innovations in TPP.

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Context: Traditional food

- Element of **identity**, culture and social environment
- Contributes to the development and sustainability of **rural areas**
- **Consumers** mainly attribute characteristics linked to **regional identity** and **sensory quality**

**EU (2006)**: “Traditional means **proven usage in the community market** for a time period showing **transmission between generations** (...) at least 25 years”

- **Need for innovations in traditional food products** (safety, healthy, sensory quality) → maintain & expand market share

  **[Guererro, 2009]**
Context: Traditional pork products (TPP)

- **Sensory acceptance of TPP by consumers**: less characterized compared to conventional products
- **Influence of innovations** aiming at improving quality of TPP: ??
- **Information** on the pig breed/production system may **influence consumer expectations** → **differentiation tool** for the marketing of TPP

[Karolyi, 2013; Asioli et al 2017]
Objectives of the study

- Evaluate the **Expectations** and **consumer acceptability of TPP**
- Influence of **innovation in TPP (ITPP)** aiming at enhancing **sensory** quality
- Influence of **information** on the pig breed/production system on consumer acceptability

- **PDO pork products**, French **Noir de Bigorre (NB)** chain, pure **Gascon** local breed (SW of Fr)

- Consumer study in **Toulouse**: close to the production area of the NB chain and new potential (and developing) market
Materials and Methods

- Harmonized protocol proposed by CREDA, ES

- Products: dry-cured hams
  - **NB-PDO** ham, 24 months ripening – local pig breed in extensive system: **TPP (NB24)**
  - **NB-PDO** ham, 36 months ripening – local pig breed in extensive system: **ITPP (NB36)**
  - **Iberian** ham, 50% Iberian pig: **competing product** premium Q (IB)

- Consumers
  - **124 consumers**, regular purchasers of high-quality dry-cured hams, quota sampling method (9 sessions)
**Sensory test : 3 phases** (expectation disconfirmation theory)

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<tr>
<td><strong>1. Blind liking</strong></td>
<td>A <strong>blind</strong> sensory test : hedonic evaluation with no information</td>
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<td><strong>2. Expected liking</strong></td>
<td>An evaluation of the <strong>expected</strong> liking as affected by product description (no sensory test)</td>
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<td><strong>3. Informed liking</strong></td>
<td>An <strong>informed</strong> sensory test : hedonic evaluation</td>
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**Preparation of products**

**Consumer tests**
At each phase, for each product: **score on discrete scale from 1 (dislike extremely)** to **9 (like extremely)**

- **Data analyses: mixed model (SAS)**
  - differences in acceptability between products and test phase
  - Random effect of session, Interaction product * test phase, Repeated measures within consumer
  - Results: lsmeans ± s.e.
Results

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<tr>
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<th>Blind</th>
<th>Expected</th>
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<tr>
<td>NB24 - TPP</td>
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<td>NB36 - ITPP</td>
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<td>IB - competing</td>
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Product: $P < 0.0001$  
Phase: $P = 0.52$  
Prod*phase: $P < 0.001$  
Session: $P = 0.16$
Results

No difference between products, high blind liking

Product description strongly influenced expected liking

Higher actual liking for NB24 & NB36 than for IB

a, b, c: within phase = differences between products

X, Y, Z: within product = differences between test phase
Conclusions and perspectives

- High but similar blind acceptability of the three products
- High consumer expectations for TPP and even more for ITPP
- Information improved hedonic perception for PDO-NB hams (TPP and ITPP) but impaired that of IB ham
- Fulfilment of hedonic expectations for the TPP

Results will be completed with consumer preferences and willingness to pay
Thank you for your attention!