International Conference: Camel milk overview in the Mediterranean basin

Consumer perception of camel milk in the Mediterranean basin

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What we already know...

- Preferences
  - Taste appears to be a problem:
    - Different taste and aroma (lower lactose content and higher salt content) compared to cow milk which affected its acceptance
    - Flavouring camel milk with chocolate can enhance the sensory quality of the milk

- Attitudes to camel milk
  - For the European market camel milk can be regarded as nearly unknown/new product
What we already know...

- Health issues
  • Importance of supposed “Health effects” as buying factor

- Environmental issues
  • Environmental advantages (lower carbon footprint?)

- Technological issues
  • Camel milk does not coagulate easily and thus it is difficult to make fermented dairy products such as cheese, yoghurt and butter from camel milk
What we did...

- **Objective:** Explore consumer attitudes towards and acceptance of camel milk and camel milk products, in order to identify appropriate segments for market introduction and design adequate communication strategies for a successful market uptake.

  i) attitudes and perceptions/beliefs about camel milk and its properties, potential concerns and skepticism consumers may hold

  ii) acceptance and interest

  iii) communication messages around relevant benefits and advantages of camel milk to respond to consumer needs and expectations

  iv) effect of the information provided on expectations, sensory perception, purchase intention and willingness to pay for different products made from camel milk
What we did...

**Task 8.1**
- Literature review
  - Scientific papers
  - Grey literature
  - Local news, journals, etc.

**Task 8.2**
- Exploratory research

**Task 8.3**
- Quantitative on-line survey
- Socio-demographics
  - Body Mass Index and dietary restrictions
  - Shopping responsibility
  - Consumption of milk and milk products
  - Food Choice Questionnaire
  - Consumer of traditional food products
  - Product knowledge
  - Attitude towards camel milk
  - Innovativeness scale
  - Food Neophobia
  - Willingness to try and to buy camel milk
  - Product involvement
  - General health interest
  - Price consciousness
  - Beliefs

**Task 8.4**
- On-line creative sessions (co-creation)
- Selection of most appropriate promotional messages

**Tasks 8.5 & 8.6**
- Consumer acceptance (France, Germany and Spain)
- Sensory perception (CATA)
- Behavioural neuroscience

**Markets covered:**
- Algeria
- France
- Germany
- Turkey
- Spain

Exploratory research — Two 90-minute focus groups per country (awareness, knowledge, perceptions, attitudes, acceptance)
What we observed...

• Exploratory research (Focus Groups)
What we observed...

• Exploratory research (Focus Groups)(Task 8.2)

1. Existing milk options (cows and plant-based) largely satisfy consumer needs
2. In order to be tempted to try a new milk alternative, consumers have to be convinced by health benefits, price and availability
3. Curiosity about camel milk
4. Camel milk bottles and ice cream were the most appealing suggested products across all 3 markets
5. A saltier taste note is polarising and limits use cases
6. The suggested price point was felt to be too high and would be a major barrier to consideration
What we observed...

• On-line survey (Task 8.3)

5163 respondents

Camel milk knowledge

<table>
<thead>
<tr>
<th>Country</th>
<th>Heard</th>
<th>Human consumption</th>
<th>Tasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>25.2 a</td>
<td>26.4 a</td>
<td>3.9 a</td>
</tr>
<tr>
<td>Spain</td>
<td>29.0 a</td>
<td>30.2 ab</td>
<td>3.9 a</td>
</tr>
<tr>
<td>Germany</td>
<td>45.7 b</td>
<td>36.7 b</td>
<td>8.2 b</td>
</tr>
<tr>
<td>Turkey</td>
<td>68.4 c</td>
<td>49.6 c</td>
<td>15.8 c</td>
</tr>
<tr>
<td>Algeria</td>
<td>87.6 d</td>
<td>83.9 d</td>
<td>33.6 d</td>
</tr>
</tbody>
</table>
What we observed...

• On-line survey (Task 8.3)

<table>
<thead>
<tr>
<th>Country</th>
<th>WTT</th>
<th>WTB</th>
<th>Expected price</th>
<th>WTP</th>
<th>WTP (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>5.310 a</td>
<td>5.227 a</td>
<td>125.314 a (DZD)</td>
<td>141.036 a (DZD)</td>
<td>0.976</td>
</tr>
<tr>
<td>Turkey</td>
<td>5.133 a</td>
<td>4.930 b</td>
<td>43.212 b (TL)</td>
<td>48.160 b (TL)</td>
<td>2.481</td>
</tr>
<tr>
<td>Spain</td>
<td>4.629 b</td>
<td>4.412 c</td>
<td>4.723 c (€)</td>
<td>3.469 c (€)</td>
<td>3.469</td>
</tr>
<tr>
<td>Germany</td>
<td>4.407 bc</td>
<td>4.018 d</td>
<td>7.619 c (€)</td>
<td>5.089 c (€)</td>
<td>5.089</td>
</tr>
<tr>
<td>France</td>
<td>4.180 c</td>
<td>3.975 d</td>
<td>7.615 c (€)</td>
<td>6.489 c (€)</td>
<td>6.489</td>
</tr>
</tbody>
</table>

Scale from 1 to 7, where 1 is “strongly disagree” and 7 is “strongly agree”
What we observed...

• Communication messages (Task 8.4)

133 ideas from brain writing
35 ideas from forced relationships
What we observed...

• Communication messages (Task 8.4)
  - **Subjective Wellbeing**: “Take care of yourself, feel all its benefits”
  - **Sensory experience**: “Let yourself be surprised by its flavour”
  - **Novelty**: “Indulge yourself with something different”
  - **Sustainability**: “Exotic and natural, care for animals and people”
  - **Tradition**: “Enjoy a millenary tradition and culture”
  - **Life experiences**: “Live and enjoy new experiences”
What we observed...

• Consumer acceptance (Task 8.5 & 8.6)
  - SIA in Paris: 297 participants, 1 camel milk sample
  - Consumer test in controlled conditions: 300 participants (France, Germany and Spain), 3 camel milk samples + cow milk
What we observed...

- Consumer acceptance (Task 8.6)

### Mean impact

<table>
<thead>
<tr>
<th>Perception</th>
<th>Mean Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good taste</td>
<td></td>
</tr>
<tr>
<td>Pleasant</td>
<td></td>
</tr>
<tr>
<td>Mild taste</td>
<td></td>
</tr>
<tr>
<td>Sweet</td>
<td></td>
</tr>
<tr>
<td>Light</td>
<td></td>
</tr>
<tr>
<td>Creamy</td>
<td></td>
</tr>
<tr>
<td>Butter/cream</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Animal taste</td>
<td></td>
</tr>
<tr>
<td>Persistent</td>
<td></td>
</tr>
<tr>
<td>Salty</td>
<td></td>
</tr>
<tr>
<td>Acid/sour</td>
<td></td>
</tr>
<tr>
<td>Strong taste</td>
<td></td>
</tr>
<tr>
<td>Strong odour</td>
<td></td>
</tr>
<tr>
<td>Bitter</td>
<td></td>
</tr>
<tr>
<td>Odd odour</td>
<td></td>
</tr>
<tr>
<td>Odd taste</td>
<td></td>
</tr>
<tr>
<td>Bad taste</td>
<td></td>
</tr>
</tbody>
</table>

### Expected acceptance

<table>
<thead>
<tr>
<th>Country</th>
<th>Blind liking</th>
<th>Liking full</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR</td>
<td>5,465 a</td>
<td></td>
</tr>
<tr>
<td>ES</td>
<td>4,320 b</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>4,708 b</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>Blind liking</th>
<th>Liking full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow</td>
<td>7.3 a</td>
<td>7.6 a</td>
</tr>
<tr>
<td>CM1</td>
<td>4.6 b</td>
<td>4.4 b</td>
</tr>
<tr>
<td>CM2</td>
<td>3.8 c</td>
<td>3.7 c</td>
</tr>
<tr>
<td>CM3</td>
<td>3.2 d</td>
<td>3.0 d</td>
</tr>
</tbody>
</table>
Take home messages...

1. The milk market is saturated: few possibilities to introduce a new product (gastronomy, ethnics restaurants...)
2. Price and sensory characteristics are the main barriers
3. Positive attitude towards the product and curiosity about it
4. Importance of highlighting only those properties that have been scientifically proven
5. European consumers can differentiate between different product qualities: avoid marketing defective products (animal taste, too salty, bitterness...)
Camel Milk

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