Determining consumer preferences – its more than just talk – the need for organoleptic analysis

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Overview of presentation

- Increasingly we’re investing in research to “enhance” food product quality in hopes of increasing value…
  - New varieties (pest and disease resistant, climate suited)
  - Perishability, storage life
  - Labels (credence information such as “organic”)
- BUT, what if that product changes the sensory attributes
- May be able to sell the product once, but what about twice?
- Important to understand all quality cues consumers use
- Must understand the impact of product “improvements” on sensory or organoleptic attributes
Organoleptic analysis?

“…of or pertaining to the sensory properties of a particular food or chemical.”

Typical sensory properties of a food product

- taste (sweet, sour, bitter, flavour)
- appearance
- color
- aroma
- size
- firmness
- sound (e.g., the “snap” or “crack” when biting an apple)
- mouth feel (tenderness, juiciness)
- any other sensations related to eating a food
An example of how sensory information matters...
Example: Development of grass-finished beef products

- Determine factors influencing consumers’ preferences and WTP for grass-finished beef steaks.

- What product attributes and socio-demographic, behavioral factors affect consumers’ willingness to pay for grass-finished beef
  - Organoleptic – tenderness, juiciness, flavour, overall acceptability
  - Visual factors (e.g. colour)
  - Production attributes
  - Nutritional attributes
  - Demographics, psychographics, behavioural

Methods

- 250 consumers randomly selected
- 12 taste panels in each location (6-12 consumers per panel)
- Paid $50 and endowed with a one-pound pack of frozen steaks
- Surveyed on purchasing behavior, preferences, attitudes, perceptions, knowledge of labeling claims & socio/psycho-demographic characteristics
- Introduction of economic experimental auction procedures
- Practice auctions
- Sensory and visual evaluation and binding auctions w/ 6 pairs of steaks w/ varying amounts of information
Previous Research: Labeling Claims

- US consumers prefer the taste of grain-fed beef.
- Grass-fed beef products contain *elevated* concentrations of some “good nutrients”:
  - B-carotene (Vit. A)
  - Omega-3 fatty acids
  - Conjugated linoleic acid (CLA)
- Higher levels of omega-3 fatty acids have a positive effect on consumer choice,
  - …But price, fat and calories most important (McCluskey et al., 2005)
Perceived Eating Quality, Food Safety and Nutritional Value of Beef with Attributes

![Bar chart showing perceived eating quality, food safety, and nutritional value of beef with different attributes.](chart.png)

- **Eating Quality Higher**
- **Food Safety Higher**
- **Nutritional Value Higher**

Attributes:
- Graded beef
- Pastured beef
- Organic beef
- Natural beef
- Not fed antibiotics
- No hormones
- Raised locally
- Traceable to the farm
- Grass-fed beef
- Grain-fed beef
- Aged
- Guaranteed tender
Impact of Information on WTP for Grass-fed Beef

Blind Taste Tests

<table>
<thead>
<tr>
<th>Taste 1</th>
<th>Taste 2</th>
<th>Visual Only</th>
<th>Prod. Info</th>
<th>Nutrition Info</th>
<th>Visual &amp; Taste Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>-$0.19</td>
<td>-$0.36</td>
<td>-$0.41</td>
<td>$0.04</td>
<td>$0.67</td>
<td>$0.04</td>
</tr>
</tbody>
</table>

$/lbs.
% Consumers preferring grass

![Bar chart showing the percentage of consumers preferring different grass conditions]

- Taste 1: 35.7%
- Taste 2: 36.6%
- Visual Only: 37.1%
- Prod. Info: 53.1%
- Nutrition Info: 62.9%
- Visual & Taste Info: 46.0%
Preference Consistency?

- 29% of consumers who preferred GRASS with market information changed their preference to GRAIN in when presented with full information
  - Taste of GRASS was “bad” enough to cause them to switch to GRAIN
- 13% of consumers who preferred the GRAIN changed their preference to GRASS after tasting
  - Information played a more important role than taste
Conclusions and Implications: R4D Perspective

- Understanding the quality attributes important to consumers is important for value chain development
  - Ultimately extrinsic attributes will sell a product once, but organoleptic quality is also important in growing demand

- Exposing producers to organoleptic information is also helpful
  - e.g. impact of production methods on quality

- Sensory research does not need to be difficult- you do not need “trained” panels
  - But, you do need products to test
  - Need methods to measure consumers’ perceptions of organoleptic quality
Questions?