FoodUnique - ‘Back to the future for traditional food’
a European interdisciplinary network approach
Sensory Science Group – Dept Food Sci

The senses in relation to food perception and eating

- **Started**: 1995
- **Staff**: 25+ staff (+4 affiliated)
- **Research projects**: 20+

**Annual scientific works**
- 20+ original research papers
- 20+ international conference proceedings
- Organizing international scientific meetings (Eurosense 2014)

**Annual education**
- 2-4 PhD theses/year - 15-20 MSc/BSc theses/year
- ca. 200 students in different sensory courses, BSc, MSc, PhD
- MSc programmes: European Sensory Science and Gastronomy and Health

**Network Coordinators**
- [www.foodunique.eu](http://www.foodunique.eu)

**Memberships**
- European Sensory Network [www.esn.net](http://www.esn.net)
- European Sensory Science Society (E2S)
- Danish Sensory Society (D2S)
Sensory research – 3 Research focal areas

1. Why do we choose one food over another?

Food preference and acceptance

Wender Bredie

Food perception and sensory identity

Derek V. Byrne

Physiology of food behaviour

Per Møller

Product understanding

Consumer understanding

3. Does the mind reflect the mouth?

2. How does my body react to food?
MY FOCUS: - Our perceptual interaction with food........

- Does the sensory ‘mind’ reflect the mouth? Dijksterhuis & Byrne 2005

The Cultural World

- Does the sensory ‘mind’ reflect the mouth? Dijksterhuis & Byrne 2005

Modified from Thompson et al.
Sensory research facilities at Dept Food Science

Location 1 – Sensory Profiling
• Focus/training room
• Consumer test rooms
• Sensory kitchen
• Sensory Profiling (SENSELAB)

Location 2 – Designated Labs
• Integrated sensory and neurophysiology laboratory (MULTISENSE)
• Behaviour observation room (OBSENSE)
• Molecular gastronomy kitchen (GASTROLAB)
• Sensory education laboratory (EDUSENSE)

Toll Provision as well as research.... 😊
SENSELAB – Sensory Methods

- **1996 – Sensory Profiling method development**
  - Application of MVA to interdisciplinary data sets...

- **2010 – Fast methods**
  - Flash Profiling
  - Napping
  - Ultra Flash Profiling

- **2012 – Conceptualisation - assessments**
  - Access the deeper concepts that influence food choice
  - MVA mapping of attribute types
  - ‘Honey makes me angry’

Applicable with fundamental basis
MULTISENSE laboratory

**Olfactometry**
- Odour mixtures
- Odour thresholds
- Adaptation
- Odour learning

**Electrophysiology**
- EEG brain scanning,
- Elec. Dermal Activity,
- fMRI - Århus Skyby
OBSENSE laboratory

Observe food-induced behavior
• Facial expressions
• Food intake
• Social interactions

Projects
• Food acceptance learning in early life (PhD, 2010)

• Food emotions & basic tastes (Postdoc, 2010)

Software: Noldus - ObserverXT
The aim of this work is to explore relationships between perception (intensity and pleasantness) of basic taste solutions in different concentrations and facial reactions.

‘Intense facial reactions are correlated to low pleasantness’ Wendin & Bredie 2010

<table>
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<th>Sweet</th>
<th>Bitter</th>
<th>Bitter</th>
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<tbody>
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<td>nose wrinkle</td>
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<td>lip tightened</td>
<td>lip corner up</td>
<td>lip corner down</td>
<td>mouth opening</td>
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<td>Sweet</td>
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<td>Salt</td>
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<td>tongue out</td>
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GastroLab: Expectations and surprise in Molecular Gastronomy derived meals

Molecular Gastronomy: a new emerging scientific discipline.

Field of Potatoes  Roots of Salad  Cheese and Rhubarb  Milk in Textures
A wider view

Positioning of sensory perception & identity in a multidisciplinary context
Aim: ‘Understanding, defining, optimising, developing and promoting unique food from a multidisciplinary perspective in the European Union’

Vision

- 'FOODUNIQUE - defining food identity' is an interdisciplinary Network of European research groups,

- Encompassing Genetics, Location, Identity, Perception, Marketing and Health researchers

- Branch organizations, tourist boards and governmental bodies

- In the context of cultural, economic and climate benefits,

- With a view to promoting sustainable agriculture and rural development, in Europe where unique food can be considered strategically and scientifically under-defined from a regional perspective.

(see www.foodunique.eu).
The Partnership

- 21 partners
- Linked to past and present projects via members

Annual meeting
The Question ...

- What constitutes a unique food?

What are the implications of this? Who would eat the red one?
Approach: Linkage of Interdisciplinary - Research Themes

- Location: Genetics, Geography
- Identity: Sensory, Methodologies
- Perception: Consumer, Marketing
- Well being: Health, Bioactives
In broader terms.
Context – from an EU policy perspective

• EU Common Agricultural Policy (CAP) REFORM 2013.....
  -Sustainable agriculture - EU
  -Rural Development - FAO

• SME development – Key focus of EU Framework 8.......
  -SME contribution to EU food Industry.....
  99% companies in EU are SMEs, generating 48% of revenue

• PDO/PGI REFORM on-going – ‘a protection paradox’.......
  ‘legal protection of brands versus sustaining and promotion of unique foods.......’

• Culture and Heritage – EU/FAO – The Rethymnon (Crete) Declaration 1998.....
  Food as a cultural resource – European Institute for Comparative Cultural Research
  ERICarts Institute www.ericarts.org

• In Scandinavia - New Nordic Food.......
Research Promotion Priorities

- **Objective determination of food uniqueness - PhD**
  - a multi disciplinary perspective

- **Influence of Genetics on taste**
  - specification

- **Uniqueness and novelty - PhD**
  - in the success of traditional products

- **Maintenance of unique food product properties**
  - to the shelf

- **Marketing of products**
  - in terms of uniqueness......
Research Promotion Priorities

• **Unique food and Health**
  o understanding and improvement

• **Gastronomy and regionality**
  o the meal context

• **Economic, environmental and policy development**
  o re regional food

• **Focus on SMEs**
  o knowledge transfer and development

**e.g. A Danish initiative**

• ‘From Gastronomy to Industry’
SME TT – ‘Gastronomy to Industry’ Platform

**Chefs and craftsmen**
- Chefs
- Food innovators
- Food artisans
- Nordic Food Lab

**Scientists**
- Dept. Food Science
- UCPH cross faculty
- GTS Agrotech
- Other universities
- Networks
- FoodUnique

**Food producers**
- Artisanal Producers/SMEs
- Branch organisations
- Large Food Producers
- Supermarkets

**Raising the lowest bar:**
‘Democratise good food’
An SME booster

The ‘Sense-Award’ scoring system: Objective adjudication for a multi category food awards competition

Increasingly, food preferences have become based on the monitor we taste therefore we eat, with consumers consistently seeking quality information across the product spectrum. Thus, the use of ranking indications from food awards has become important to a product’s impact in the marketplace, particularly ‘traditional foods’; however, do these awards in sensory terms design objective assessment? The Blas na hEireann Irish National Food Awards have been held for the last three years on the first weekend of October in Dingle County Kerry as an integral part of the annual Dingle Food and Drink Festival. Upwards of eight hundred products have been submitted to the awards competition each year and scored from approximately 200 companies across over 27 categories.

All products entered from across all food categories required comparison and independent assessment. A robust scientific scoring system was required. A non complex complex scoring scheme which involved the Sense-Award scoring system was applied to the large multi category general food awards with the aim of determining the overall quality and mass appeal for products presented blind to the judges to ensure impartiality. The Sense-Award method was proven to be a statistically valid system for judging systems of description, discrimination and ranking of product quality. This method was designed by sensory experts from University College Cork (UCC) and the University of Copenhagen (UCPH). In this system, judges were trained and provided with basic instruction material used to select individuals from different parts of the food industry, including commercial buyers, chefs, retailers and food writers but without consumers of the recipes products tested. Scoring combined of objective and subjective criteria for appearance, aroma, flavor, texture plus the subjective items of overall quality and mass appeal for products presented blind to the judges to ensure impartiality. This Sense-Award method has proven to be a statistically valid system for judging systems of description, discrimination and ranking of product quality.


The Irish National Food Awards (Blas na hEireann) supports the Food and Agriculture Organization of the United Nations and the European Union's development of the Sense-Award system which has added precision and objectivity to sensory evaluation of traditional foods in the context of a truly sustainable global economy.
Societal standpoint: Project – EU FP 7

Full title of the Project:
Towards inclusive research programming for sustainable food innovations

EU FP 7 capacities coordination and support action 2011-2014

The central objective of INPROFOOD is to promote the bottom-up development of concepts (processes and structures) of societal engagement in Food and Health Research

18 partners from across the disciplines + policy bodies
About FOODUNIQUE

FOODUNIQUE is a European Network of interdisciplinary research partners, encompassing Location, Identity, Perception, Well-being researchers, branch organisations, tourist boards and governmental bodies.

Aim

FOODUNIQUE aims at researching, understanding, defining and promoting the benefits of food uniqueness in the European Union.

Contact

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Newest

Networks annual Meeting 2012
Theme: FoodUnique 2 - Back to the future for traditional food

Meeting to take place 3-4th May

Location:
Dept. Food & Nutritional Sciences
University College Cork, Ireland

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www.foodunique.eu
• Traditional food research approached from an integrated multidisciplinary perspective

• ‘Go back to the future’ in traditional food research
  • Apply latest techniques and concepts in a synergistic way re:
    - Modification, innovation, eating variety, sustainability, cultural heritage etc........

and
Food for ‘unique’ 😊 though….. At lunch

Can we teach an old dog new tricks?