

# Sensory applications within food



Loughry Campus

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## Overview



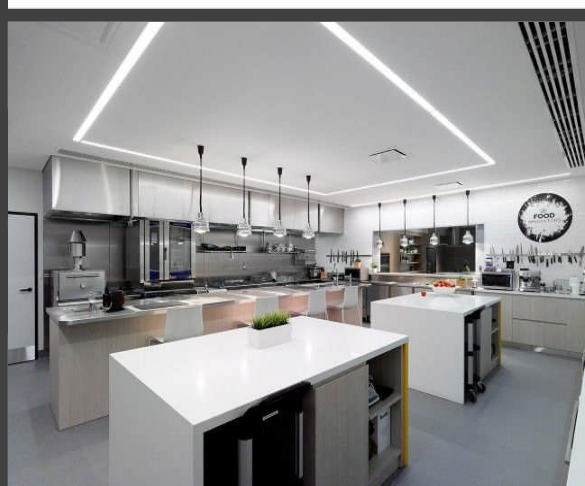
### **Food Technology Branch**

- All Commodity Sectors
- Start-up to SME to Multinationals
- 300 Food Businesses per year





## Key platforms



# Sensory

- Sensory – near market sensory evaluation – general consumer panels

- **Consumer Panel**

Consumer panels are performed to determine consumer preferences. These tests are performed with completely random people. They can also tell you if consumers can distinguish the difference between different variations of the product.





# Sensory applications

- Product development
- Quality control
- Benchmarking
- Shelf life- Frozen / Fresh
- Ingredient substitution

Satisfying consumer needs

Developing new products

Controlling the quality





- What do you want to find out?
- What do you want to use the results for?
- Why are you wanting to do sensory?

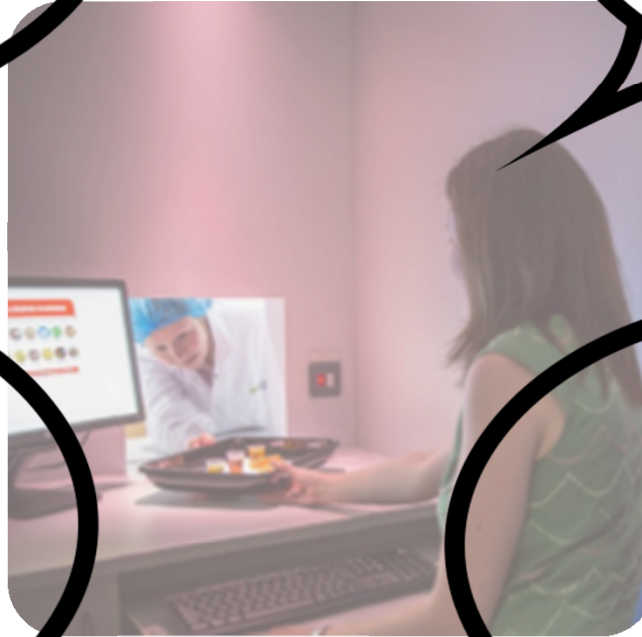
I want to do  
some  
sensory

Can people  
notice the  
change ?

How long is it  
before it  
tastes  
different ?

Which does  
the consumer  
prefer?

How does my  
product taste  
compared to  
the  
competition?





# Product development

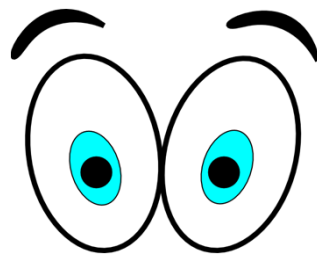




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# First – Sight in supermarket/shops

First sense to be used  
and  
can indicate the next  
actions by the consumer



# Sensory Marketing

*Appeal to your customer's senses  
& make your brand irresistible!*

<https://thriveagency.com/news/sensory-marketing/>



Getty images <https://www.thoughtco.com/sensory-marketing-4153908>



[http://freebie.photography/food/raw\\_fish.jpg](http://freebie.photography/food/raw_fish.jpg)



<https://www.eazypeazymealz.com/wp-content/uploads/2016/06/Dukkah-Spiced-Baked-Salmon-Fillets-4.jpg>

## Focus group room



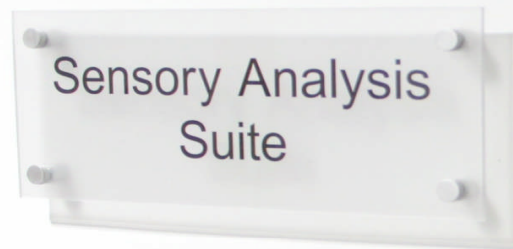




Fewer respondents  
Achieve broad and deep levels of information

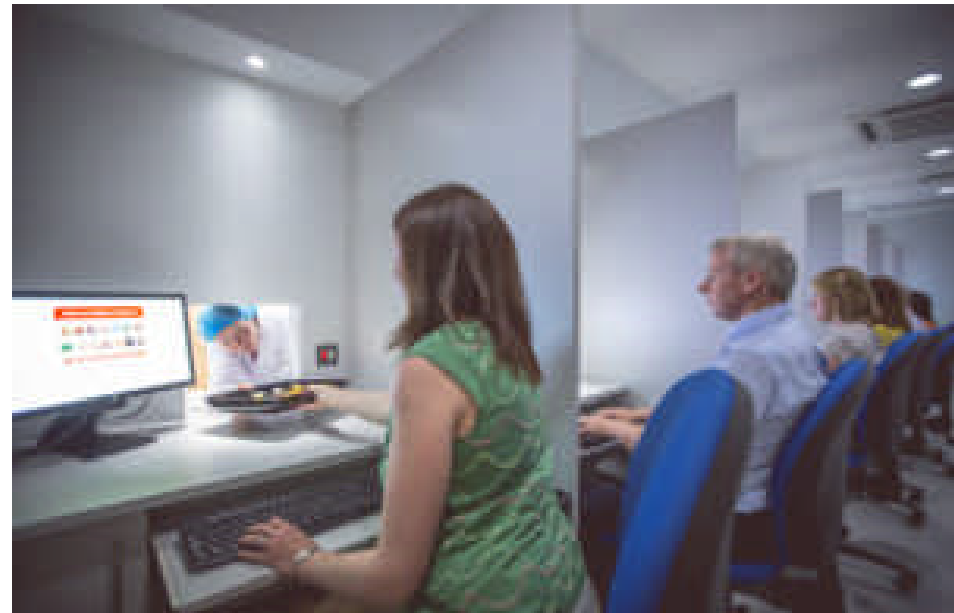


## Sensory Facilities



## 10 sensory booths

Controlled environment in sample preparation and lighting.



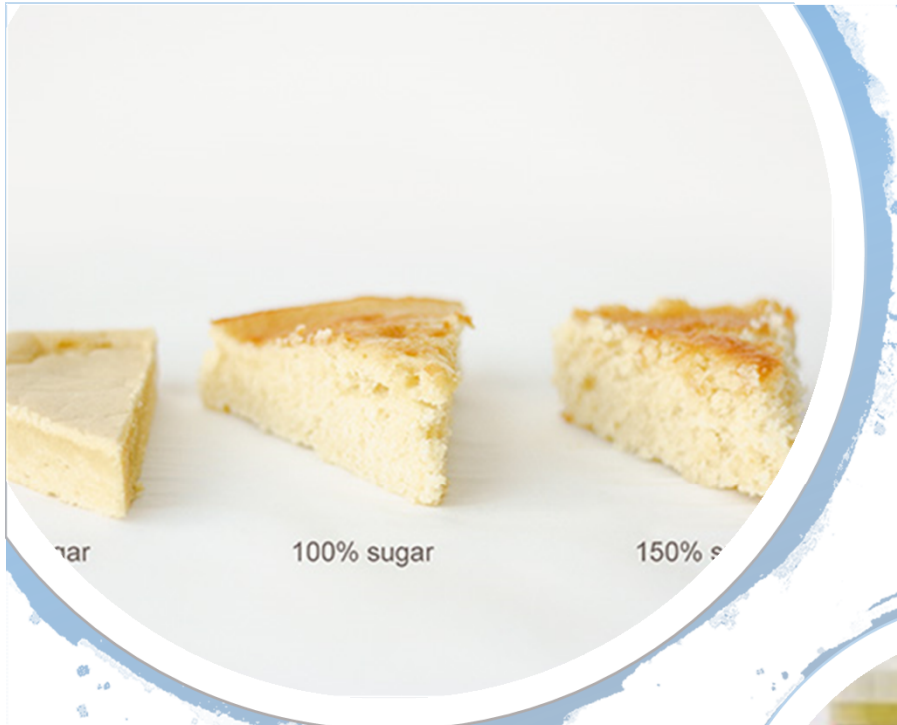
Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

From a  
consumer  
perspective





## Examples – case study



- Soup products – tasting through the shelf life of the product



- Sugar reduction in bakery products.



- Processing technique on ice cream project



# Soup

**Scenario:** Chilled Soup product to look at the taste profile at the start of life and end of life



- Consumer panel-conducted using one type of soup at each panel.
- Using – appearance, aroma, taste, texture and overall acceptability

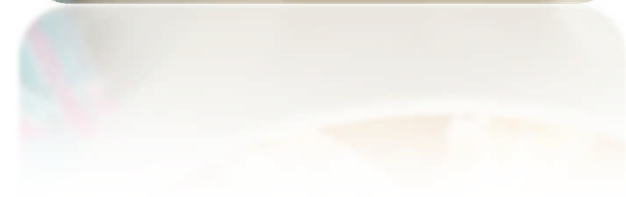
# Bakery

**Scenario:** Taste panels and views on reduced sugar in bakery products



- Contained a series of panels/focus group
- Reduced sugar – 2 samples the same with one difference
- Sweetness, appearance, texture, mouthfeel, softness, overall acceptability

# Ice cream (lower fat)



## Ice cream (lower fat)



**Scenario:** The use of HPP on lower fat ice cream to identify how the sensory properties are affected

- Sensory focus group

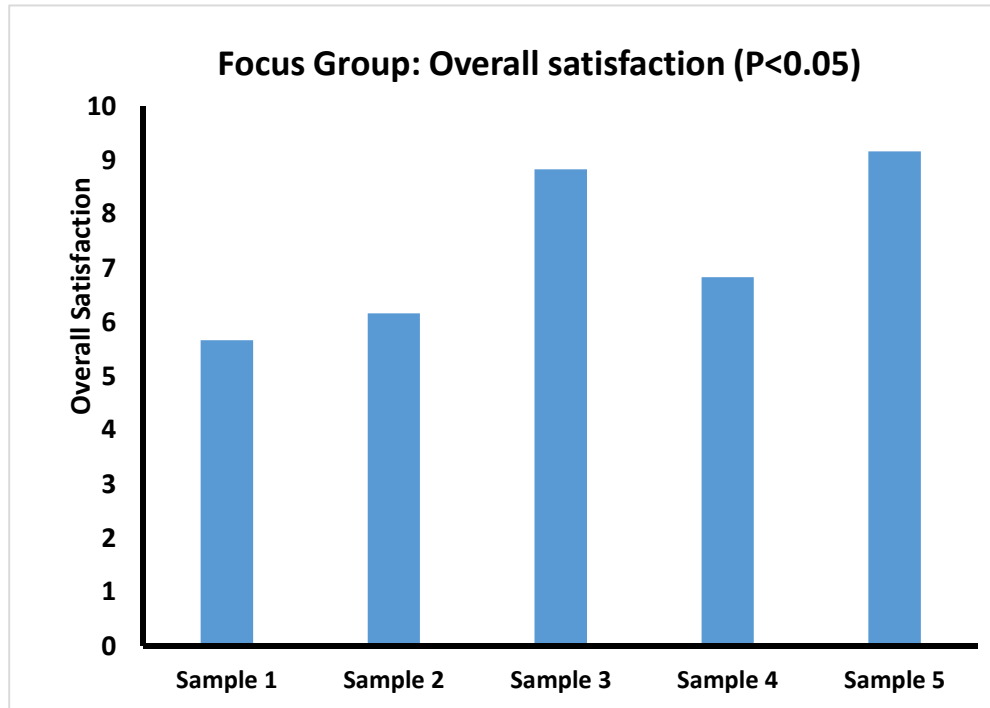
- Sensory taste panel-

Sensory panel 1

Sensory panel 2



## Focus group – sensory



Control	500/ 2mins	500/ 5mins	600/ 2mins	600/ 5mins
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Figure 3. Focus Group Analysis

- Figure 3 shows that panellists were 30% more satisfied with sample 5, than sample 1.
- The Expert Focus Group preferred sample 5 over all other samples, describing it as 'Pleasant', 'sweet' and 'very good'
- The group noticed differences in sample colour, aligning with the work of Johnston, D.E *et al.* (1992).



## Consumer Panel 1

Overall	Control	Sample 2	Sample 3	Sig
<b>Appearance</b>	<b>7.67 b</b>	<b>7.64 b</b>	<b>7.90 a</b>	<b>**</b>
Taste	7.29 a	7.21 a	7.55 a	NS
Texture	7.40 a	7.38 a	7.79 a	NS
<b>Mouthfeel</b>	<b>7.43 a</b>	<b>7.36 b</b>	<b>8.02 a</b>	<b>**</b>
Aftertaste	7.17 a	7.12 a	7.26 a	NS
Acceptability	7.38 a	7.24 a	7.60 a	NS

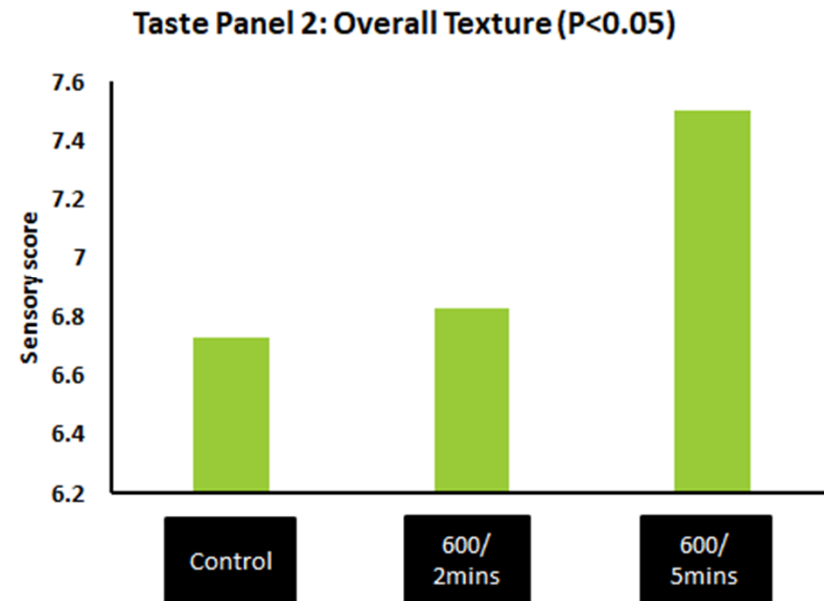
- Sample 3 scored significantly higher for overall appearance and mouthfeel.
- The sample was 'liked very much' by panellists
- It is evident that increasing pressure time from 2 minutes to 5 minutes positively enhances both appearance and mouthfeel.

STANDARD V'S LOWER PRESSURES

## Consumer Panel 2

	Control	600/ 2mins	600/ 5mins	Sig
Overall Appearance	7.53 a	7.83 a	7.93 a	NS
Overall Taste	7.13 a	7.30 a	7.53 a	NS
Overall Texture	<b>6.73 a</b>	<b>6.83 a</b>	<b>7.50 a</b>	<b>*</b>
Overall Mouthfeel	6.90 a	7.00 a	7.50 a	NS
Overall Aftertaste	7.10 a	7.20 a	7.20 a	NS
Overall Acceptability	6.90 a	7.03 a	7.37 a	NS

STANDARD V'S HIGHER PRESSURES



# Summary



Sensory  
pathway  
planning

Tailored to  
suit the  
project

Focus group prior  
to the sensory  
panel can aid the  
panel planning  
and the required  
outcome

Preparation  
as much as  
possible to  
reduce bias

Can benefit  
commercially  
and  
operationally