



**UCD Institute of Food and Health**

# **Building Research Partnerships with the Food Industry: A Case Study**

**Dr. Amalia Scannell**

**Mobile: 00353 (0) 86 6085520**

**Email: [amalia.scannell@ucd.ie](mailto:amalia.scannell@ucd.ie)**





## Overview

- Sensory Science Research in UCD
- Reaching out to Food Industry (SFNI research)
- Reaching out to UCD (EI research)
- Help us to help you



## Sensory Panels

In Sensory Analysis the ‘panel’ is the tool we use to

- to measure the sensory attributes of a product
- to determine whether differences exist between products/ formulations
- to determine whether a product is acceptable or preferred etc.





**SENSORY  
PANELS**

**Analytical**  
Trained/ selected panel  
Objective  
Quantitative

**Affective**  
Consumer/ user groups  
Subjective/ Hedonic  
Quantitative & Qualitative

**Descriptive Tests**

**Discrimination/  
Difference Tests**

**Acceptability/  
preference tests**



# Reaching Out To the Food Industry:

Department of Agriculture FIRM Funded project  
SFNI: Emerging Techniques in Sensory Science

Building a research partnership with Waterford Blaa Bakers' Association:

- Recently awarded PGI status
- Not formally characterised

1. Is Blaa Unique?
2. What Makes Blaa unique?
3. What do Consumers think?



1. Trained panel – characterise product
2. Test products – rate attributes
3. Ask the punters – Consumer testing

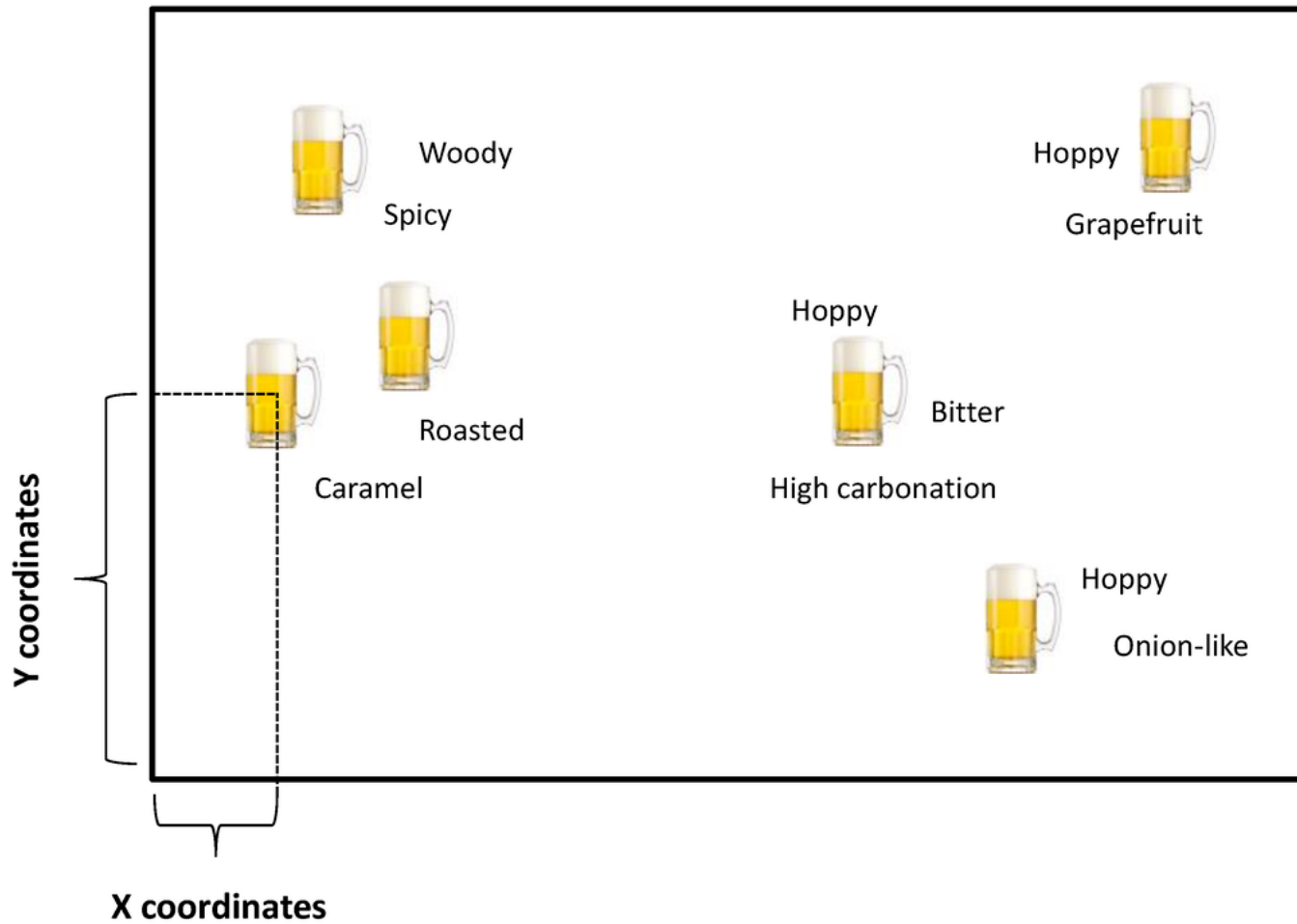




### • Is Blaa Unique? Napping Technique

- Grouping and place samples on a Nappe (white A1 sheet) for each specific Sensory Modalities (appearance, aroma, flavour and texture).
- Panellists also asked to use descriptor words to explain the location of the samples
- 10 samples including Blaa.
- Trained panel of 11 people. Age range 20 to 65.
- Asked to place the samples on the sheet; similar samples placed close together and different samples placed far apart.

- The proximity of the samples to each other indicates the level of association with each other.







## Findings: Main Sensory Characteristics

### Appearance

- Flour
- Dark Crust
- Dark Crumb

### Aroma

- Floury
- Fresh Bread
- Toasted
- Burnt

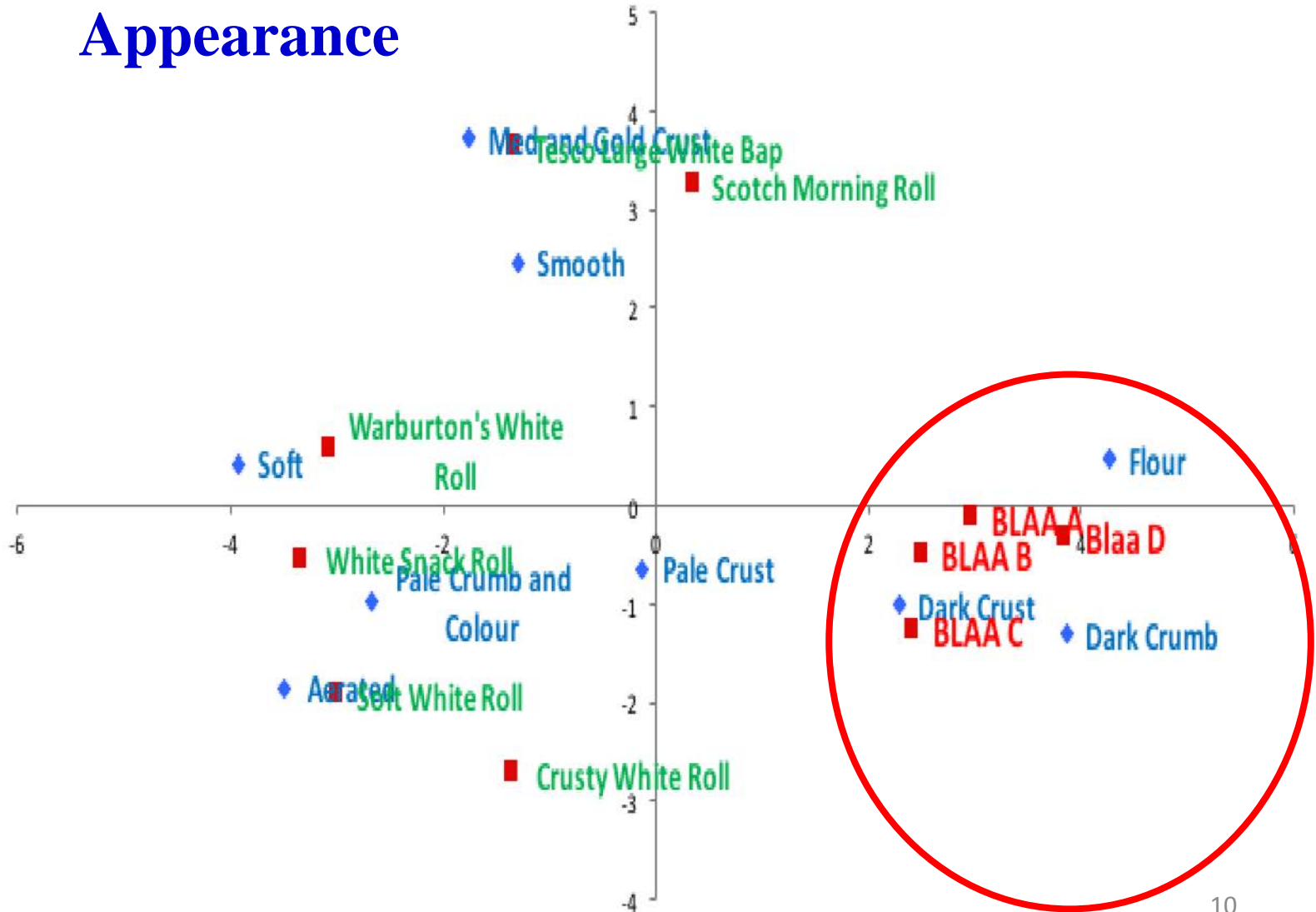
### Flavour

- Burnt
- Toasted
- Floury

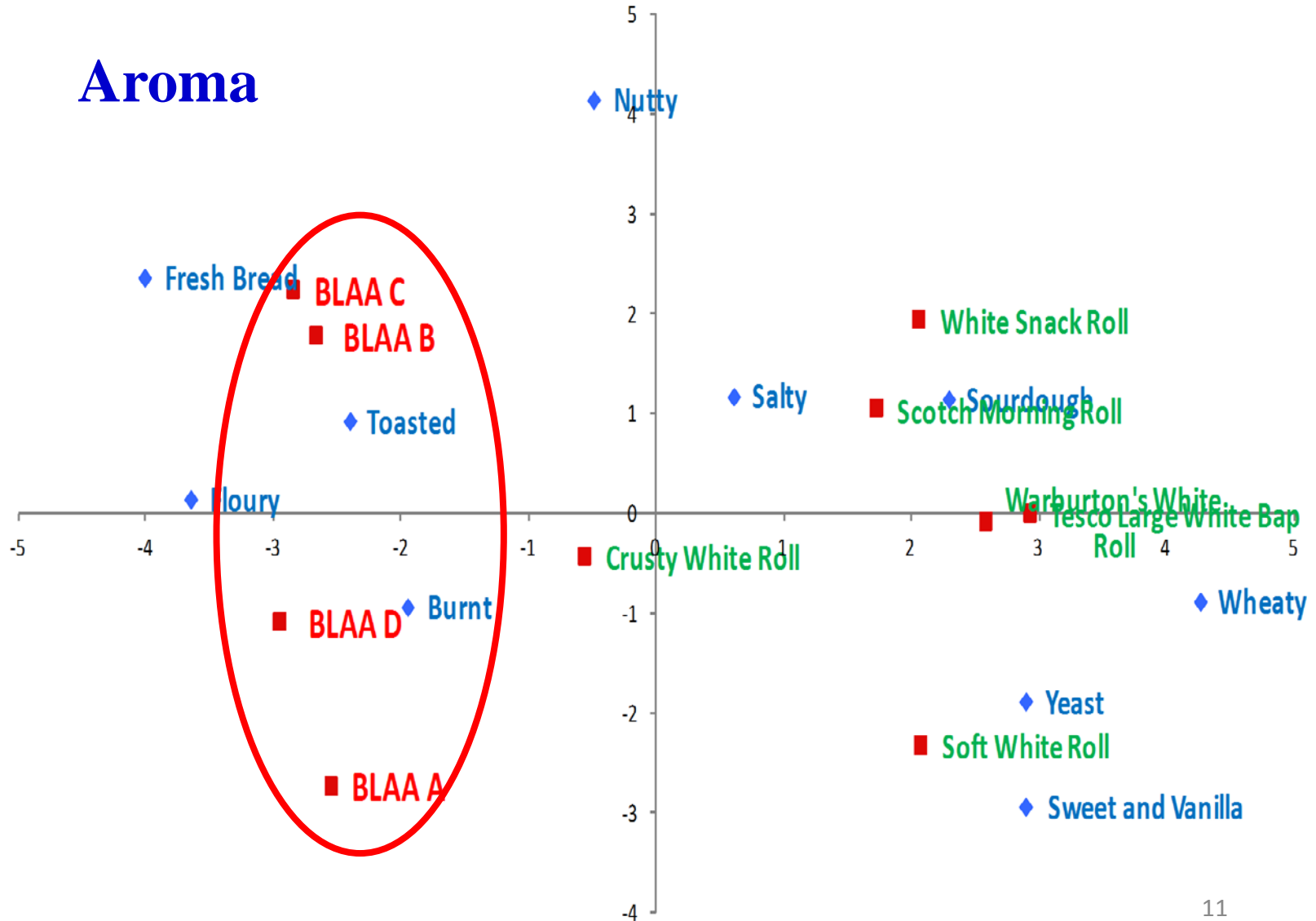
### Texture

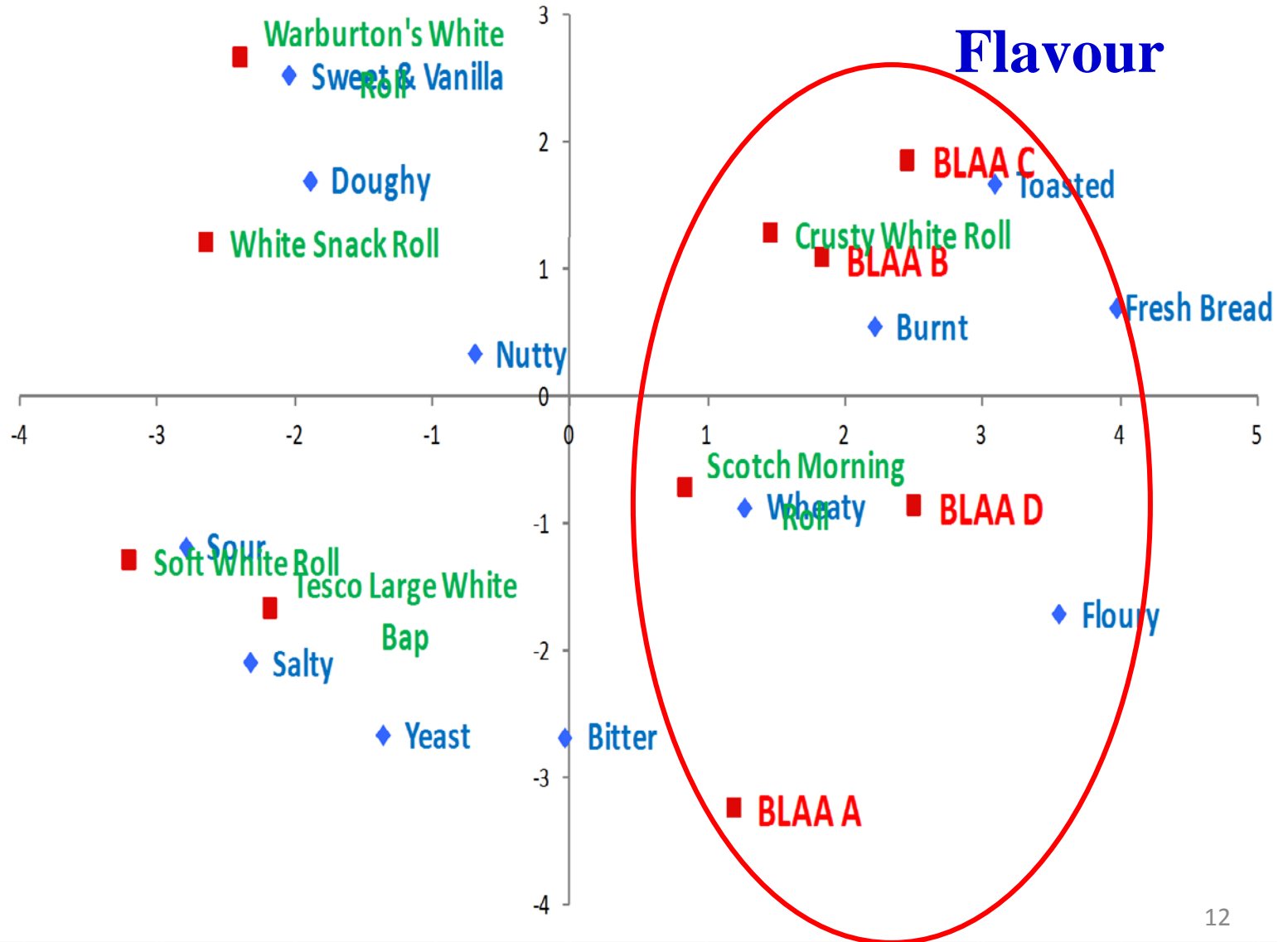
- Easy to Clear
- Chewy
- Crispy Crust

# Appearance

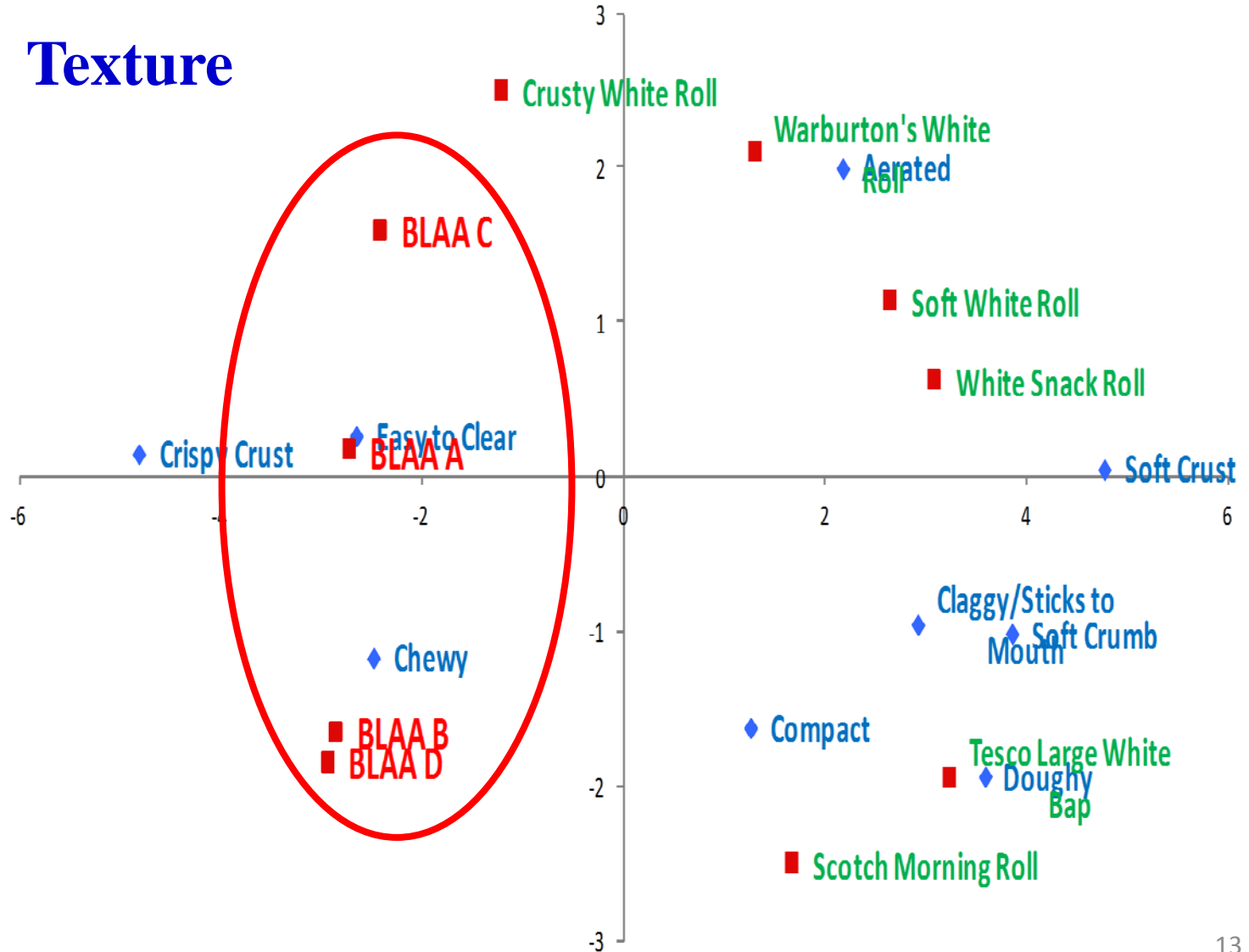


## Aroma





## Texture



## What Makes Blaa Unique? QDA

### Generating a Lexicon



### Agreeing definitions and Scales

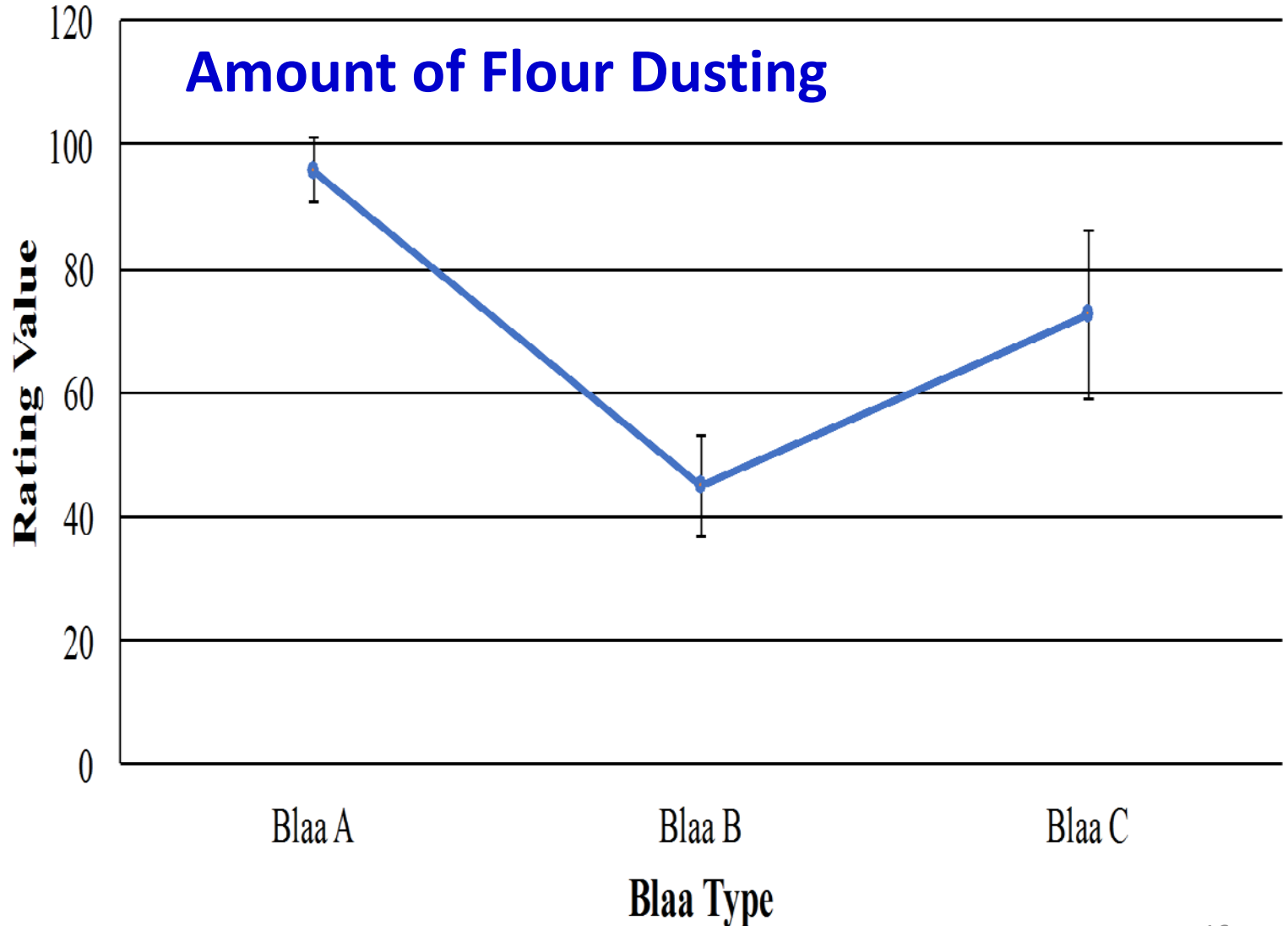


### Testing Project Samples



## Blaa Lexicon: External Appearance

Training			Rating
Attribute Name	Definition	Protocol	Range of values
Amount of Flour Dusting.	How much flour there is on all surfaces.	Pick up, rotate and look at all the surfaces.	43-96
Darkness of Flour Dusting	How dark the flour dusting is.		13-97
Amount of Exposed Crumb	How much crumb is visible externally.		26-91
Amount of Browning	How much browning there is on the surface.		29-99
Darkness of Browning	How dark the surfaces are.		26-99
Size	How much surface area the bread occupies.	Look down at the plate.	53-99
Depth	How thick the roll is from top to bottom.	Lift plate to eye level and rotate.	50-97
Amount of Cracks	How many cracks are visible on the top surface (Crack = broken surface).	Look down at the plate.	13-92
Smoothness of Top Crust	How smooth or even the top surface is.		17-93
Smoothness of Bottom Crust	How smooth or even the bottom crust is.	Pick up, turn over and look at base. Dust off any excess flour.	26-84
Shape Name	Decide what the shape is.	Check the box question	-
Uniformity of Shape	How uniform the shape of the sample is.	Look down at the plate.	45-86







### What do the Consumers think? Consumer study

- **A:** UK consumers not previously exposed to Blaa
- **B:** Irish consumers (users vs non users). To be done next weekend at the Waterford Harvest Food Festival.
- **115 untrained** volunteer consumers, on the basis of eating white bread rolls at least once a week (UK) and **122** familiar with product.
- The consumers were aged between 18-70 and there was a balanced male-female ratio. Three Waterford Blaa products were used for this test.



### What do the Consumers think? Consumer study

- Consumers were to rate how much they liked each Blaa over all and also to give the overall liking of a range of selected appearance, aroma, flavour and texture attributes.
- Consumers were also asked their opinion about key sensory characteristics of the samples using Just About Right Scale (JAR).
- ANOVA was used to determine if consumers differed significantly in their liking for the Blaa products.

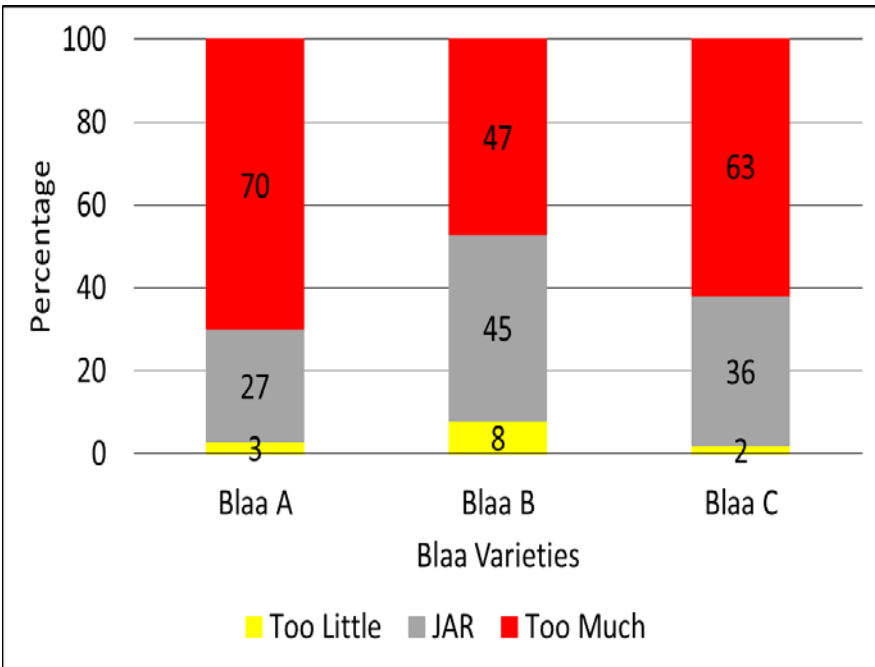


### Attributes affecting liking: FLOUR

- Appearance – **Amount of Flour Dusting**
- Texture – **Mouth coating with Flour**
  - An increased amount of flour and mouth coating correlated with a decrease in liking.
  - UK consumers felt that there was too much flour on the products.

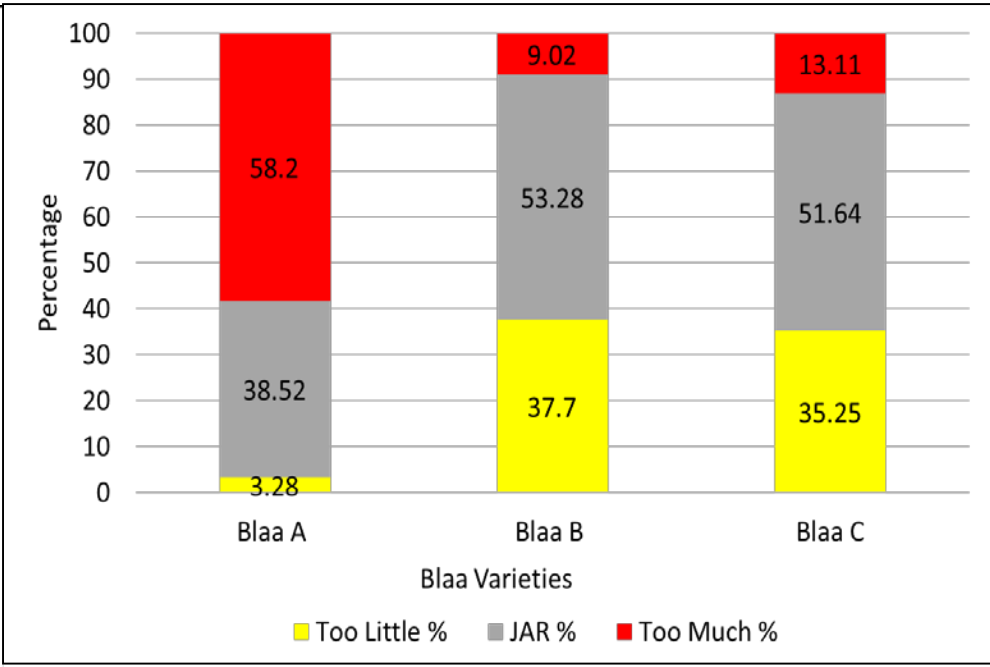


# UCD Institute of Food and Health



## UK consumers

Blaa A (P= 0.035):



## Waterford Consumers

Blaa A (p<0.0001)



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- **Reaching out to UCD Institute of Food and Health:**
- Consumer tests for SMEs
- Product Optimisation
- Shelf Life Analysis
- Food Safety
- Developing new methods
- **Training New Panels**



## How To Get Involved

- Have you got a food innovation problem you need help to solve?
- Research partners:
- Enterprise Ireland Innovation Voucher
- National Funding : Department of Agriculture  
Safood  
Intertrade Ireland



## UCD Institute of Food and Health

### Would you like to get involved as an Industry partner on one of our Food Science Degree modules?

- 3<sup>RD</sup> yr **Product development** (12 wk project **Sept - Dec**)  
**Contact Prof. Mick O Sullivan**
- 3<sup>rd</sup> yr Professional Work Experience  
**Contact Prof. Jim Lyng**
- Final year **Project** 24 week thesis  
**Contact Dr. Nigel Brunton**
- Final year **Food Sector Entrepreneurship** (12 wk project **Sept-Dec**)  
**Contact Dr. Amalia Scannell**
- Final year **Design Thinking** for **Food Packaging** (12 week project **Jan - April**)  
**Contact Dr. Amalia Scannell**

