



# Evaluating sensory properties of wheat brans

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# Funding



**OMAFRA**

**AND**



In partnership with



Mississauga Mills

# Background



- ▶ Consumers are demanding healthier products
  - Increased production of alternative products
- ▶ Product acceptability
  - Perceivable off flavors (bitter and astringent) in red bran
  - White bran > red bran<sup>1</sup>
- ▶ Polyphenols
  - Associated with bran pigmentation
  - Associated with negative sensory attributes

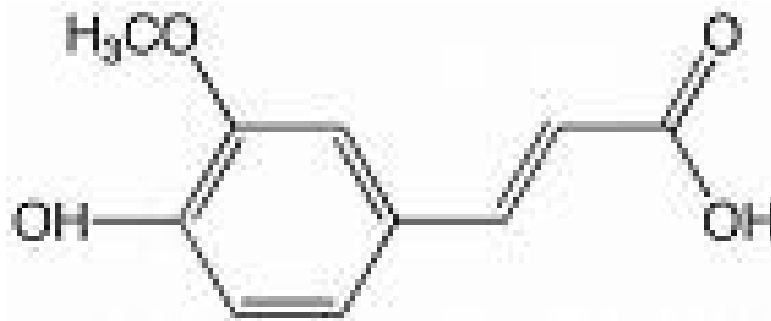


<sup>1</sup>D Zhang & WR Moore. 1999. Wheat bran particle size effects bread baking performance and quality. J Sci Food and Agri. 79:805-809.

# Objective 1

Describe the sensory profiles of red and white bran

- ▶ A trained panel will be utilized
  - Bitter
  - Astringent
- ▶ Relate to the polyphenol content



Ferulic Acid

# Objective 2



Determine the basis of the off flavors perceived in red bran

- ▶ Baking bran with various baking ingredients
  - Starch
  - Gluten
- ▶ Sensory profiles will be described



# Objective 3



Evaluate the feasibility of red and white wheat crosses to be used in whole wheat products

- ▶ Bran with varying shades of red
  - Crosses between red and white varieties of wheat
- ▶ Sensory profile described
- ▶ Polyphenol content quantified



# Objective 4



Determine consumers acceptability of whole wheat products containing red and white bran

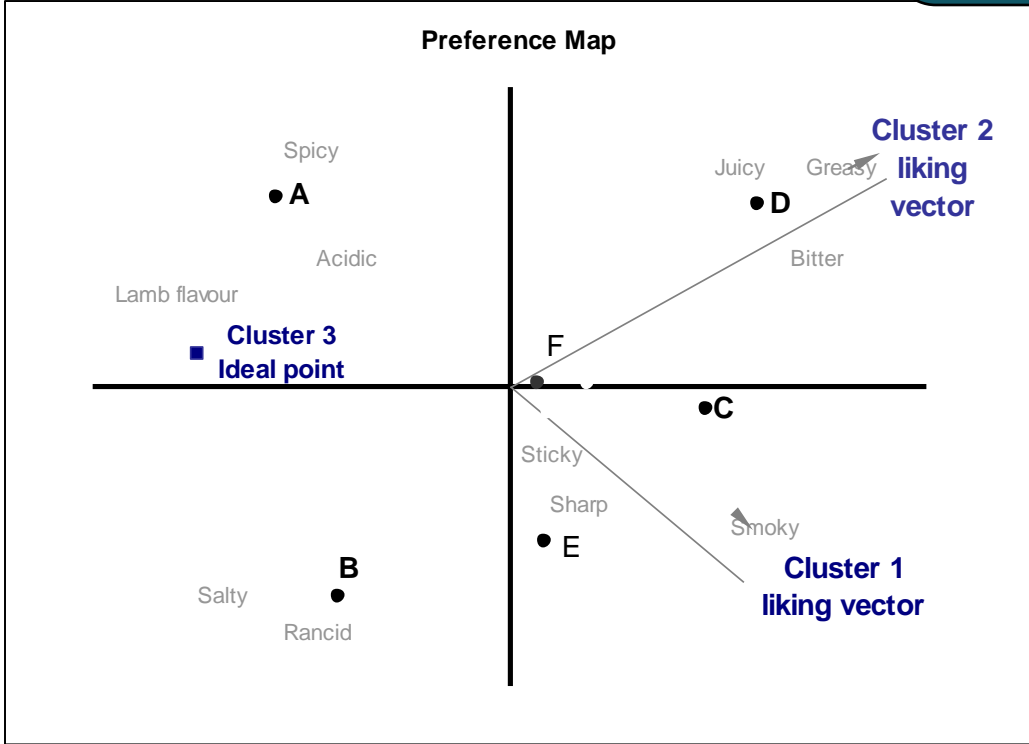
- ▶ Consumer acceptability sensory testing
  - Products containing red and white bran
- ▶ Relate to prior data obtained about sensory profiles
  - Preference map analysis

# Drivers of Liking Based on Preference Mapping

Consumers assess six products for liking



Trained panelists describe the six products in sensory terms



H Helgesen, R Solheim & T Nes. 1997. Consumer preference mapping of dry fermented lamb sausages. Food Qual and Pref. 8(2):97-109.

# Outcomes



- ▶ Relate polyphenol content to sensory attributes
- ▶ Ingredient interactions
- ▶ Drivers of liking

To date:

- ▶ Ethics approval
- ▶ Microbial testing
- ▶ Screened and selected panel





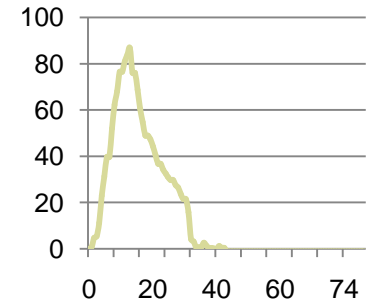
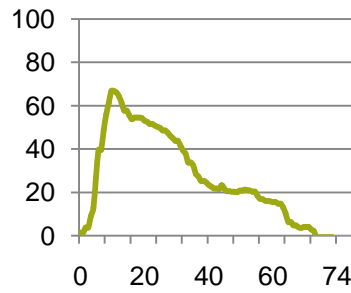
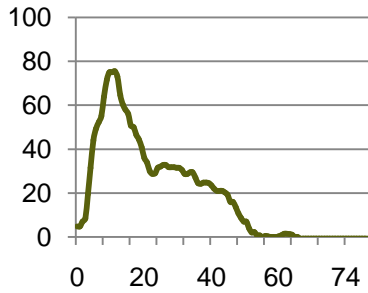
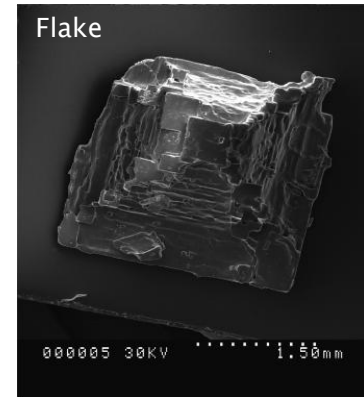
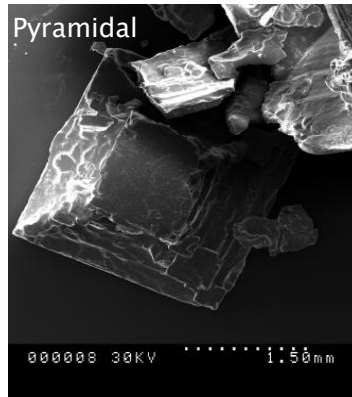
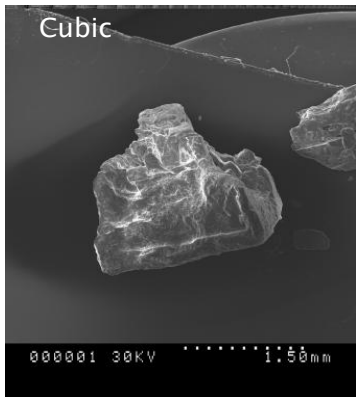
# Ongoing Sensory Projects

Dr. Lisa Duizer

# Other sensory projects being conducted in our lab



1. Salt, science and society (AFMNet funded, D Rousseau PI)
  - Development of reduced salt food with optimum salt taste



Sample	Time to Max(s)	Max Intensity	Duration (s)	Area under the curve	Increase Angle	Decrease Angle
Cubic	16	76	59	1743	52.7	27.6
Pyramidal	15	67	71	2201	51.4	31.6
Flake	12	87	42	1370	58.6	48.7





# Questions to be answered by TI testing

- ▶ How does size and shape of a salt crystal affect salt taste intensity?
- ▶ Is there a relation between dissolution rate and salt taste intensity?



# Further research

2. Relationship between body composition and sweetness thresholds in women

3. Aging initiatives

- Liking of nutrient dense foods (OMAFRA funding)
- Liking of enriched foods (Canadian Foundation for Dietetic Research funding)
- Taste and odour evaluation techniques for aging individuals



**THANK YOU!**

**Questions?**