



**Sensory analysis with culinary professionals, master brewers and small primary producers - applications, developments and insights from use of fast projective methods in the real world of experimentation and small-scale production**

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*Publication date:*  
2014

*Document version*  
Publisher's PDF, also known as Version of record

*Citation for published version (APA):*  
Frøst, M. B., Giacalone, D., & Rasmussen, K. (2014). *Sensory analysis with culinary professionals, master brewers and small primary producers - applications, developments and insights from use of fast projective methods in the real world of experimentation and small-scale production*. Abstract from SenseAsia 2014, Singapore, Singapore.

# Sensory analysis with culinary professionals, master brewers and small primary producers – Applications, developments and insights from use of fast projective methods in the real world of experimentation and small-scale production

Running title: Napping in real life

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# Introduction

- Motivation
- Methods
- Cases: Beer and Spice blends/pastes
- Results & Discussion
- Learnings
- Conclusions and recommendations

# Motivation

- Low budget sensory analysis
- Move fast sensory methods into real life
- Improve artisanal producers' documentation

Brewers, chefs and culinary professionals

- Highly educated palates
- Little tradition for rigorous taste tests
- Non-statisticians - at best



# Methods

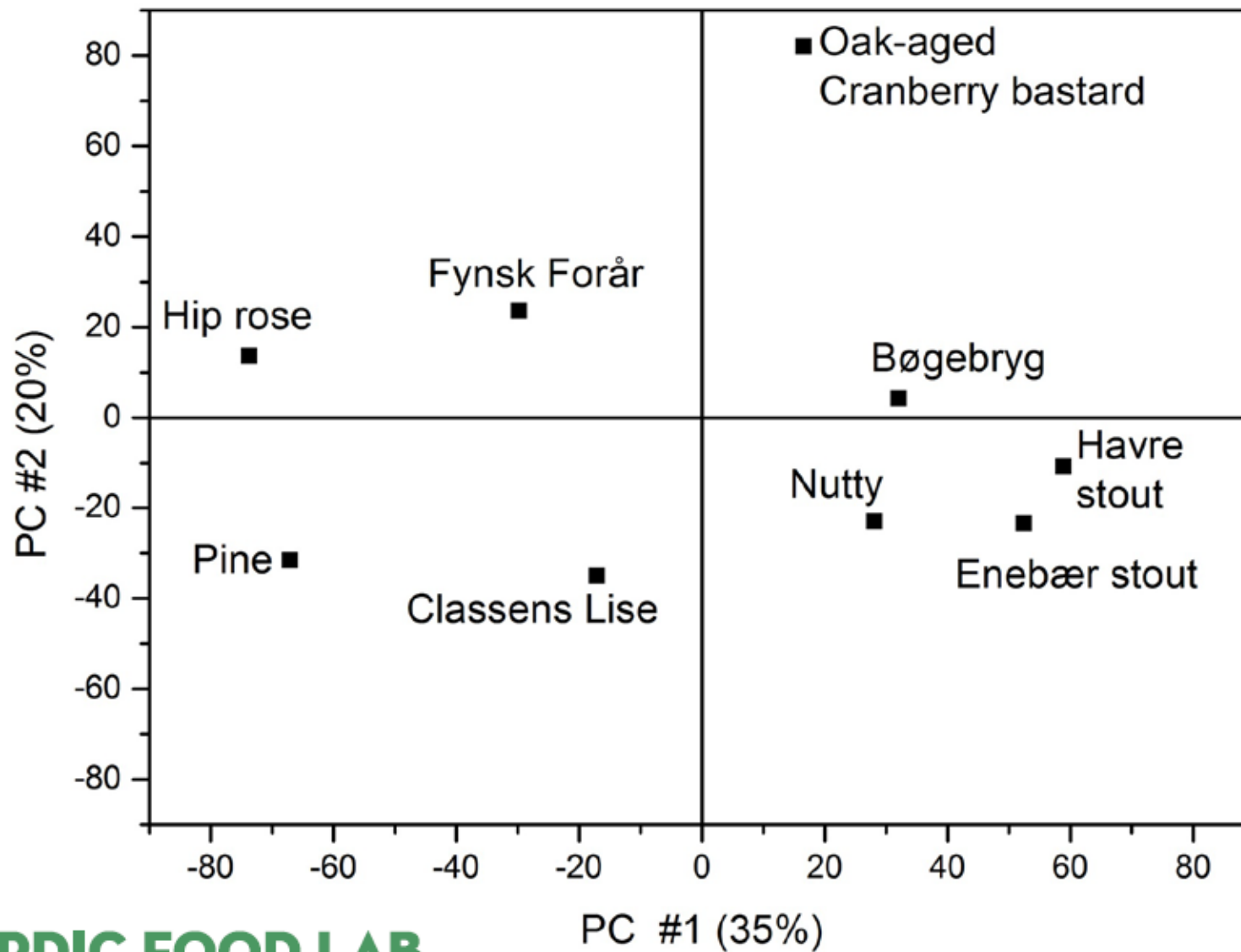
- Napping / Projective mapping
  - Instructions: Positions first, then descriptors
  - Spices - Novel format: Big Grid –A0 sheet
- Data analysis
  - Principal component analysis
    - Use animations to present methods
  - Raw X,Y positions from subjects
  - Downweigh descriptors
  - Full Cross Validation over samples

# Case: Beer\*

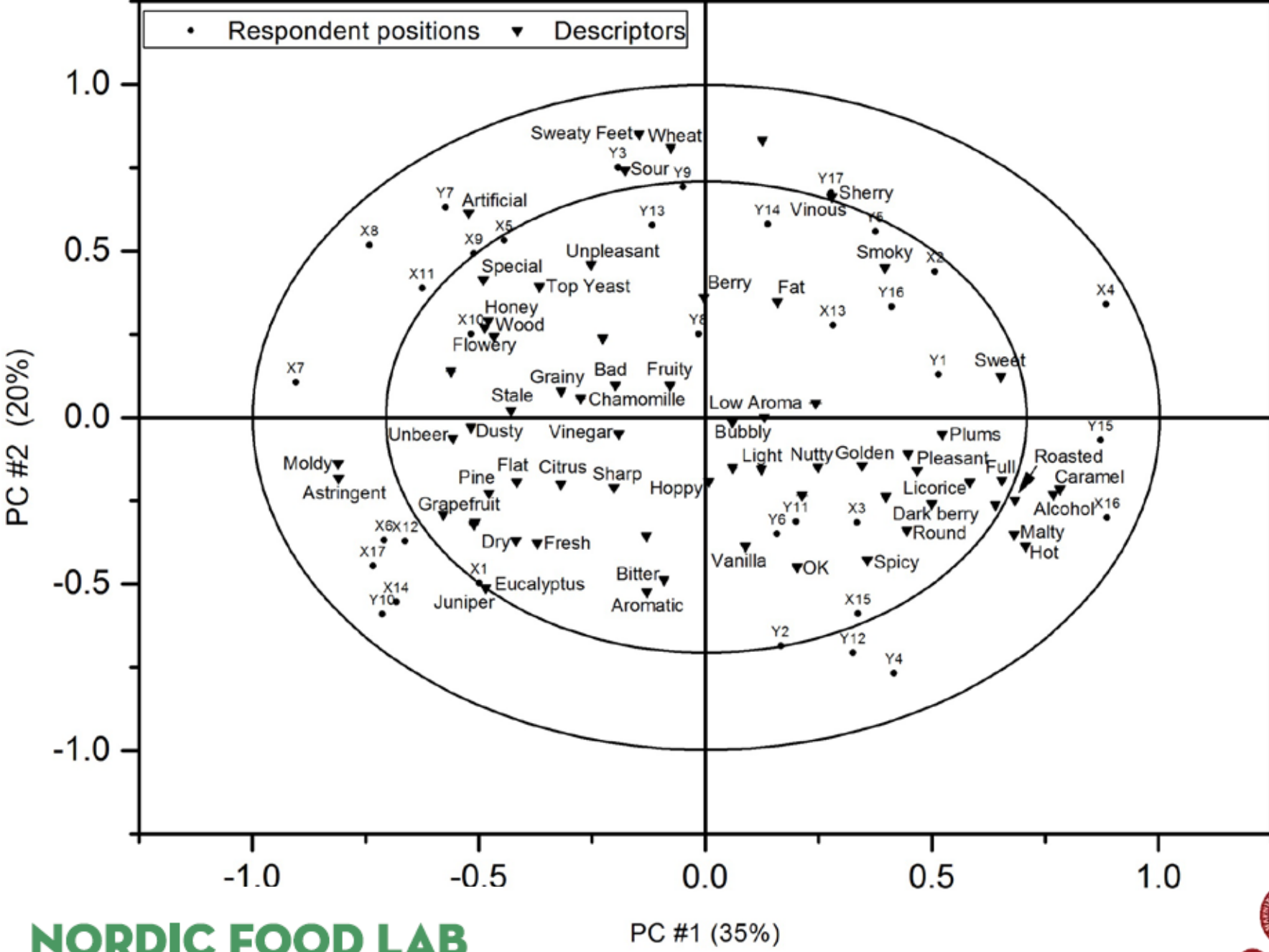
- Craft style beers
- 7 commercial beer, 2 experimental brews
  - Flavor adjuncts
- 8 Brewers + 9 project participants
- 10 minute introduction
- Partial Napping + descriptors
- Evaluation approximately 20 minutes



# Case: Beer - Results







# Case: Spice blends and pastes

- 29(!) classic and novel blends/pastes
  - Incompletely represent a broad range of cultures

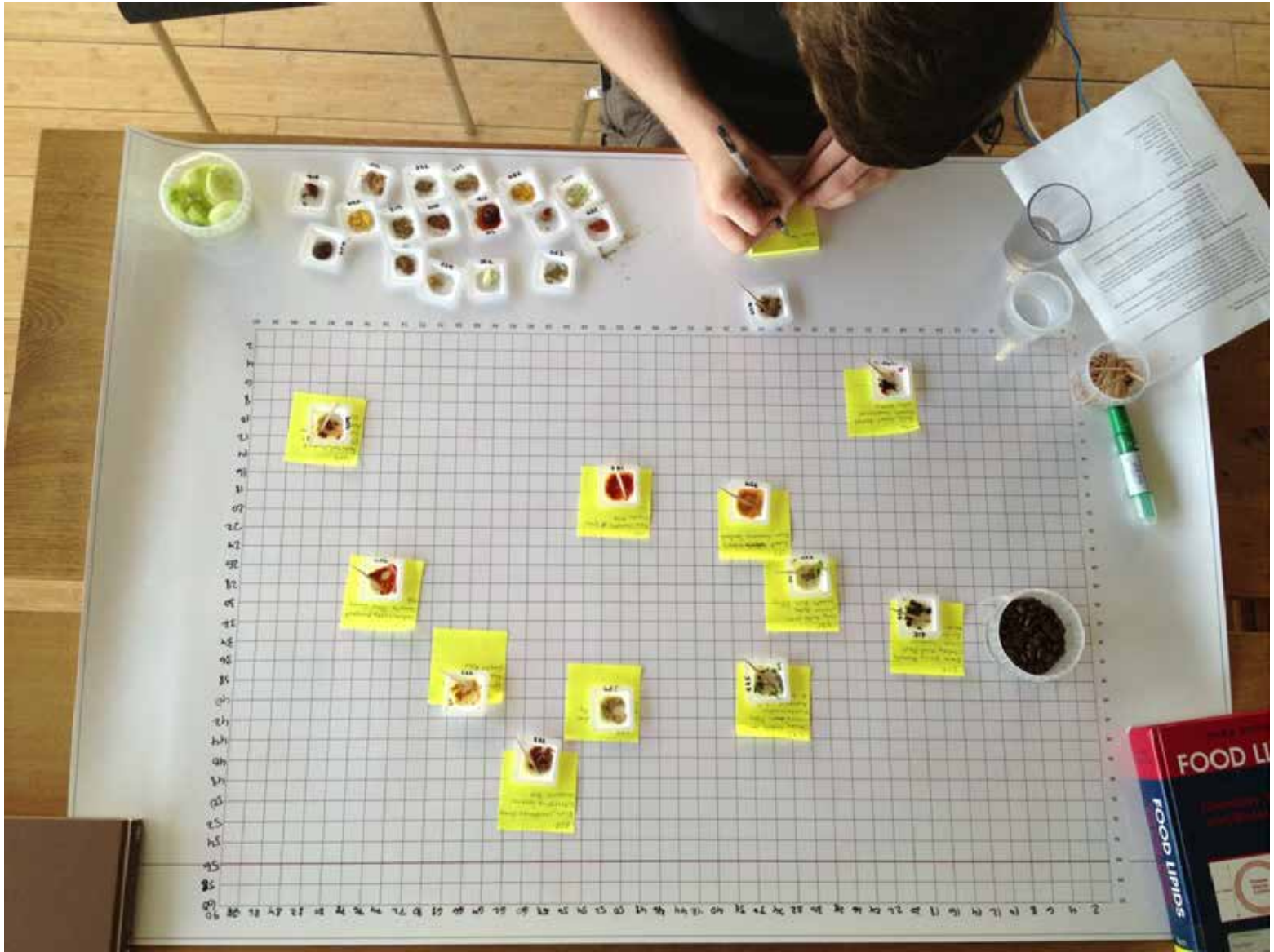
Category	Blend
Liquid Based	BBQ Chipotle Blend, Jerk Paste, Juniper and Ant paste, Tomato/Epazote, Pickling Blend, Vinha d'alhos Base
Oil Based	Afro Bahian Base, Aji Panca Adobo, Ligurian Pesto, Massaman, Mole Negro, Pipian, Recado, Salsa verde
Dry Based	Berbere mix, Dukkha, Quatre Epice, Za'atar, Shichimi Togarashi, Chinese Five-Spice, Panch Puran, Garam Masala
Dairy Based	Fresh dill Marinade, Kadi, Aji Escabeche/Peanuts, Tikka masala
Fermented	NFL fermented bean, Lacto blueberry, Peaso



# Case: Spice blends and pastes

- 29(!) classic and novel blends/pastes
  - Incompletely represent a broad range of cultures
- 26 chefs, foodies, culinary professionals
- Big Grid Napping
- 5-10 minutes instruction
- One subject at a time
- 45 min -2 hours
  - Counteract adaptation: Coffee beans, cucumber slices
  - Samples kept frozen until 30 minutes before exp.

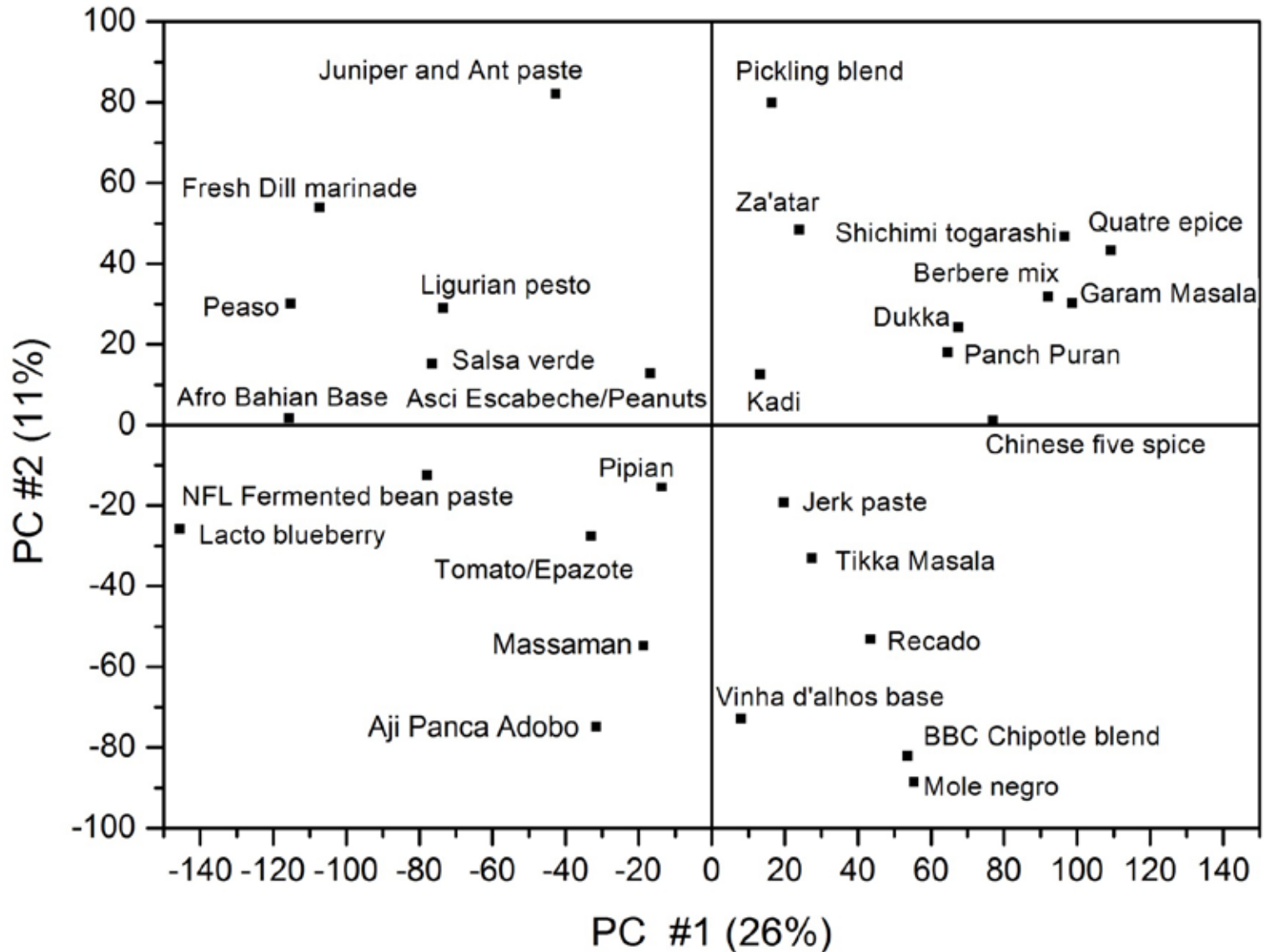


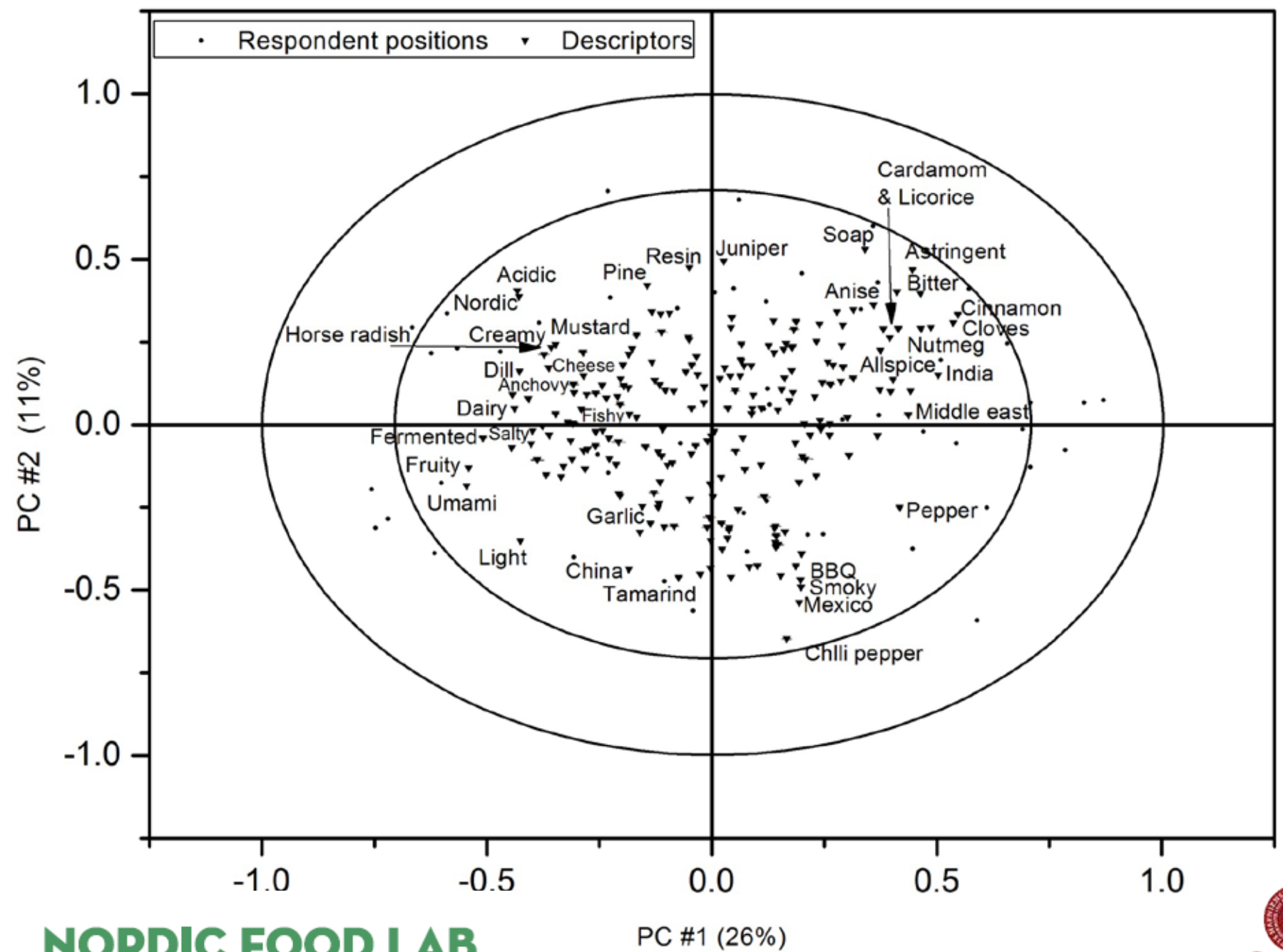


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# Case: Spice blends and pastes - Results







# Learnings

- Sort of a tasting game
- Participants understood the results!
- Useful and meaningful results with very few means

# Conclusions and recommendations

- Good for exploratory purposes
  - Early in product development cycle
  - Sufficient documentation for SMEs
- Recommend limits to number of descriptors
  - Only sensory characteristics
    - May be applications are useful for specific purposes
  - Maximum 5 descriptors pr. sample

Forthcoming book chapter:

Frøst, Giacalone & Rasmussen (2014) Alternative methods of sensory testing: working with chefs, culinary professionals and brew masters, in Delarue, Lawlor and Rogeaux (Eds.) *Rapid Sensory Profiling Techniques: Applications in New Product Development and Consumer Research*, Woodhead – date of publication September 30, 2014

# THANK YOU FOR YOUR ATTENTION

