Sensory characterisation and appreciation of pasta produced by farmers or artisans in local chains using Pivot © profile method and edonic study

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INTRODUCTION

Local wheat chains and especially pasta chains are increasingly implemented by artisans and farmers. As a new agri-food system, new indicators of sensory quality of products need to be developed. To help the pasta makers to better characterize and optimize their production, it is necessary to better determine the consumer expectations.

OBJECTIVES

This study aims to determine the diversity of sensory characteristics of artisanal pasta made in the south of France and to understand which criteria consumers appreciate.

MATERIAL & METHODS

1. Description of pasta samples

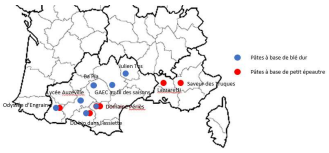


Fig. 1: Localisation of pasta manufacturing places

→ Artisanal pasta (7 from durum wheat and 5 from einkorn) produced in the south of France (Fig. 1)

→ Diversity of manufacturing process:
- Roller and stone milling
- Flour and semolina with different mineral content
- Landrace or modern wheat

2. Determination of free sensory descriptors

12 consumers of artisanal pasta
→ Pivot© profile: free description (Tab. 1) of a sample compared to a pivot (Fig. 2, Thuillier et al., 2015)

Fig. 2: Comparison of samples with a pivot

Tab. 1: Notation Grid

Sample n°	Less	More
Visual aspect		
Texture		
Taste		

3. Pasta rating and descriptors appreciation

65 panelists, pasta rating from 1 to 9
→ Hedonic test follow by non-parametric test of Kruskal-Wallis ($p<0.05$)
→ Average notes of "appreciation" integrated as descriptor in the contingency table and submitted to Correspondance Analysis to obtain sensory map

RESULTS

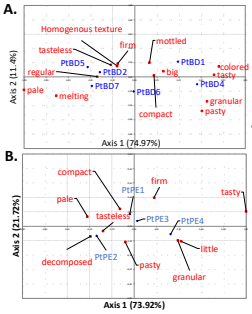
1. Descriptors generation results

Tab. 2 : Free descriptors obtained after tasting of durum wheat and einkorn pasta

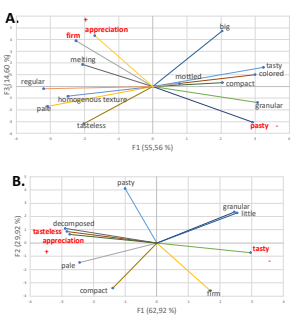
Sensory descriptors	Pasta from durum wheat	Pasta from einkorn
Common descriptors	Firm, pale, tasty, granular, pasty, colored, melting, tasteless, compact, regular, little/big	
Specific descriptors	Homogenous texture, mottled	Decomposed

→ List of useful descriptors useful to characterize artisanal pasta
→ Most of descriptors are common

2. Evaluation of pasta samples



→ Diversity of sensory characteristics of artisanal pasta (Fig. 3)



→ Consumers, mostly not accustomed to eating artisanal pasta, prefer firm durum wheat pasta and tasteless einkorn pasta (Fig. 4)

Fig. 3: Description of pasta samples (A. durum wheat pasta, B. einkorn pasta)

Fig. 4: Most appreciated descriptors for artisanal pasta (A. durum wheat pasta, B. einkorn pasta)

CONCLUSION & PERSPECTIVES

- A great diversity of sensory characteristics of artisanal pasta made in the south of France

- A large involvement of farmers-pasta makers and consumers in a participatory research

- Biochemical (focus on proteins) and textural characterization to link with pasta evaluation (in progress)

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References:

Thuillier, Bertrand, Dominique Valentin, Richard Marchal, et Catherine Dacremont. « Pivot© Profile: A New Descriptive Method Based on Free Description ». *Food Quality and Preference* 42 (juin 2015): 66-77.