illycaffè spa - Trieste – ITALY

Research & Scientific Coordination

Luciano Navarini

Team Presentation – Annual Workshop, COST Action MP1106
Dublin, September, 2012

Team's general info

illycaffè spa - Research & Scientific Coordination
Team Leader: Luciano Navarini, Chemist

- 2 Chemists
- 1 Chemical Engineer
- 2 Pharmaceutical Chemistry Technologists
- 1 Technician

sensory lab

Sensory Analysis
Consumer Science
Physiology of Perception

aroma lab

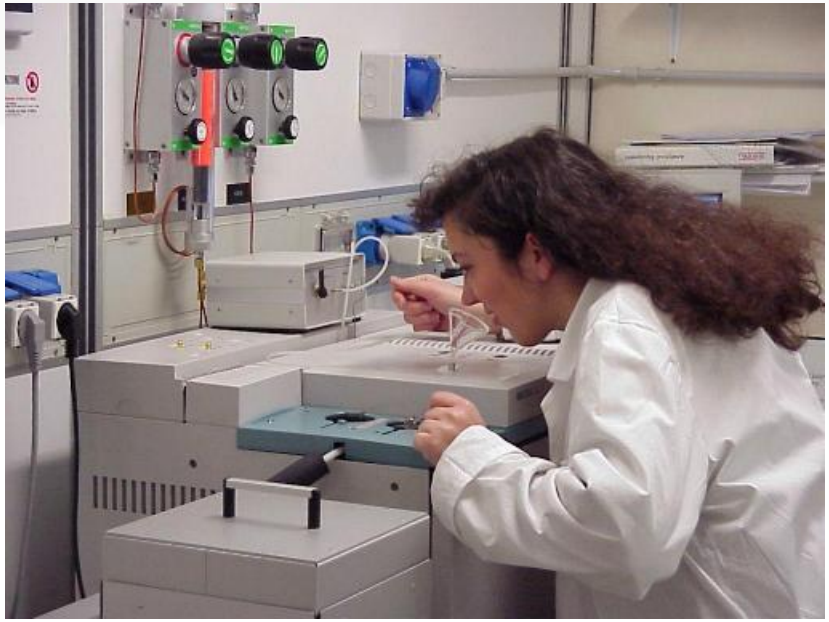
Food Chemistry
Analytical Chemistry
Physical Chemistry

ISO 17025 accreditated laboratories

Relevance to MP1106

- Foamed Food Technology
- Food Foam Characterization (focus on coffee)
- Foam mouthfeel perception & sensory
- Food – Oral cavity interactions
- Interfacial Properties (focus on coffee)

Lab description



2 Labs

- Sample preparation tools
- GC – MS
- LC – MS/MS
- GC – sniffing port
- HPLC/UPLC
- Physico-chemical characterization
- Extraction/Isolation/Purification
- Wet chemistry

Test room

- Sample preparation tools
- 12 booths
- ISO standards
- PC data acquis./process.
- Panel management

Coffee interfacial properties: oral cavity perspective

Projects

Scientific Cooperation

Genova - ITALY

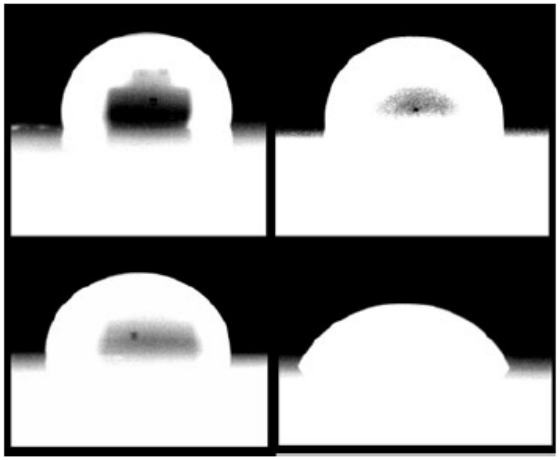


Fig. 2 Pure water (*contact angle* 97°±1°, *upper left*), human whole stimulated saliva (*upper right*), drip coffee (*bottom left*), and espresso (*bottom right*) are compared on the Teflon surface used by Ferrari et al.[40]

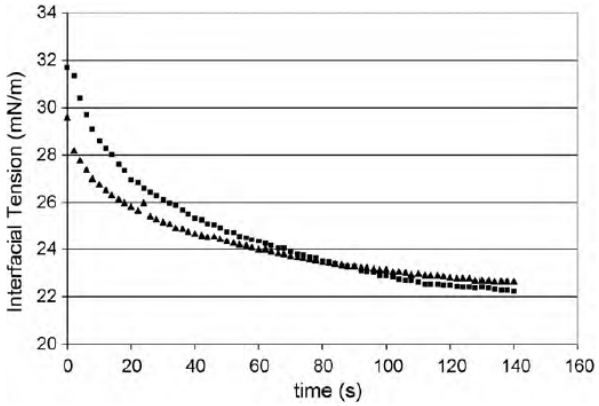


Fig. 2. Interfacial tension (mN/m) as a function of time of Brazilian roasted coffee oil samples: Abra1 (■) and Rbra (▲).

Food Hydrocolloids 21 (2007) 1374–1378

18 (2004) 387–393

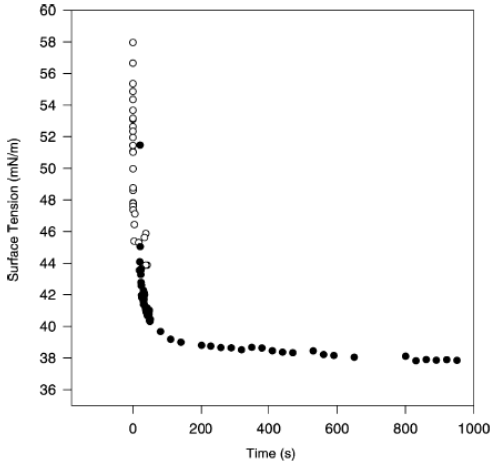


Fig. 3. Dynamic surface tension at *espresso* coffee–air interface of *arabica* beverage at $T = 20$ °C using the MBP (○) and the PD methods (●).

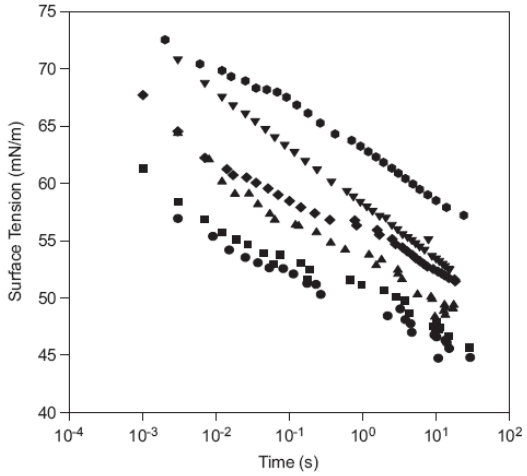


Fig. 3. Dynamic surface tension of *espresso* coffee (● *ristretto*; ■ regular; and ▲ *lungo*) and of other types of coffee preparations: soluble coffee (● c = 10 g/l, ◆ c = 40 g/l) and drip coffee (▼).

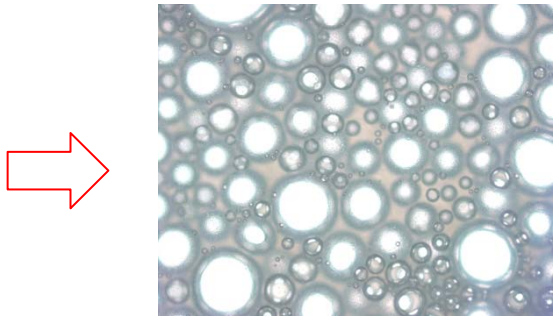
Food Biophysics (2011) 6:335–348

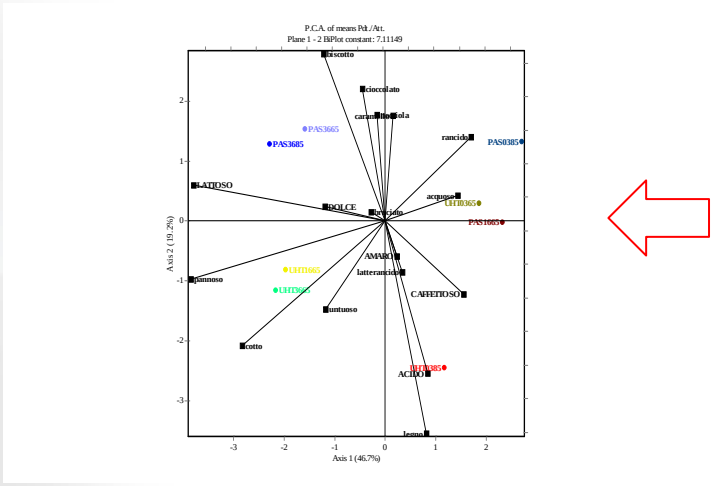
Colloids and Surfaces A: Physicochem. Eng. Aspects 365 (2010) 79–82

Milk foam and Milk steam-frothing

Joint Project

Udine
University
ITALY





Rampini et al., 2006

Projects

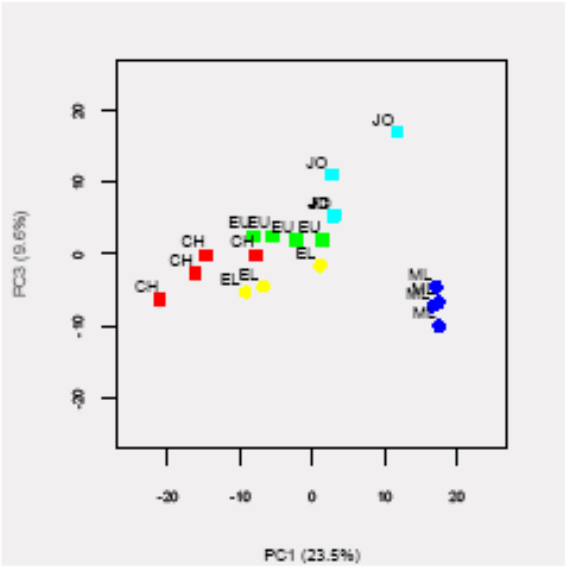
Joint Project

FONDAZIONE EDMUND MACH

ISTITUTO AGRARIO
DI SAN MICHELE ALL'ADIGE

Trento
ITALY

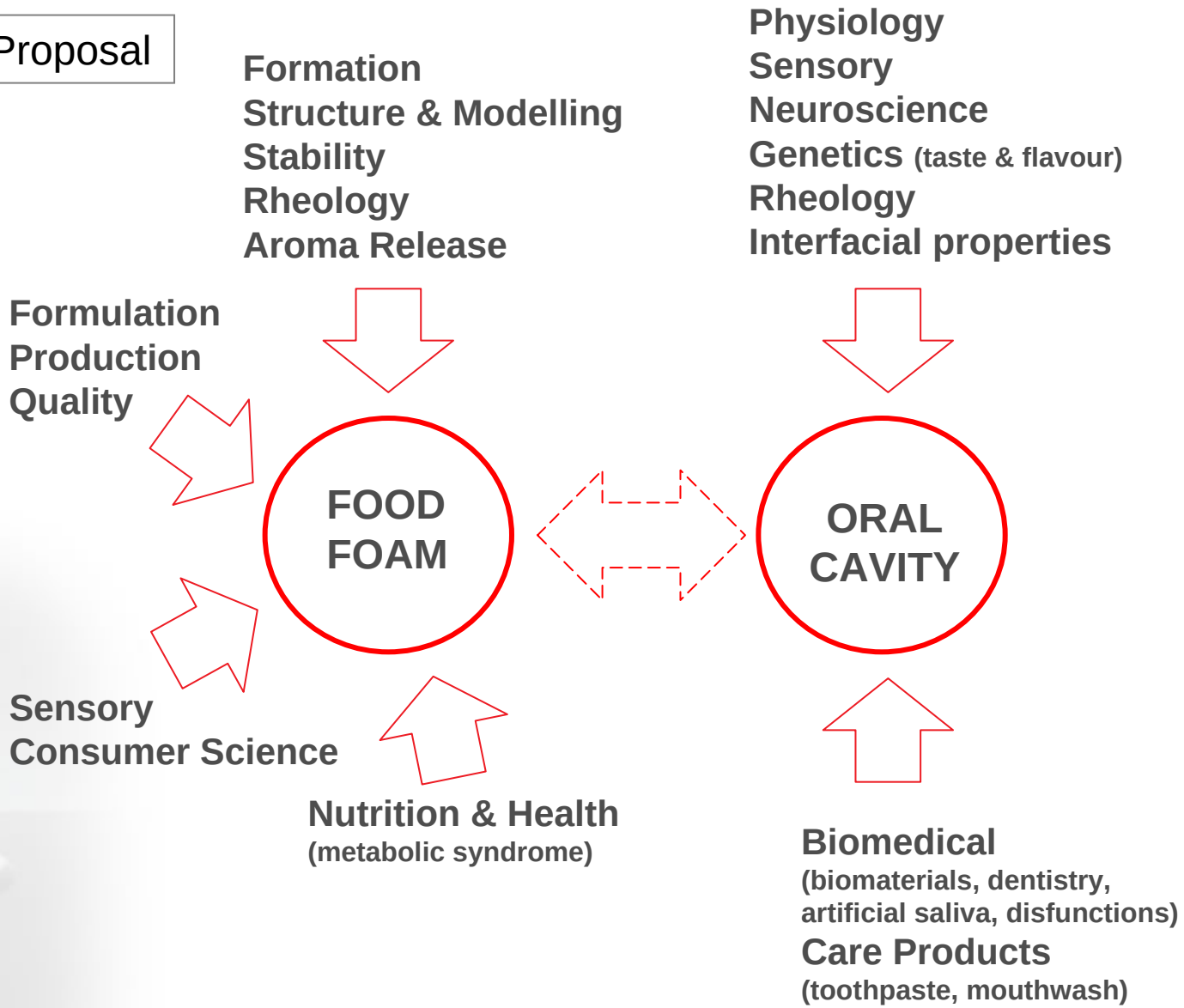
Inter-individual differences in food aroma perception by Nose-Space analysis



PCA graphic discrimination of panelists. The two types of symbols denote different genders (circle=female, square=male)

Romano et al., FOP 2012

Topics for Research Proposal



Topics for Research Proposal

FOAM – SENSORY PERCEPTION MECHANISM

(Chemoreceptors – Mechanoreceptors)

FOAM – TASTE/FLAVOUR INTERACTION

INTER-INDIVIDUAL VARIABILITY

(Perception/Preference)

NEW FOAMED-PRODUCTS

Thank you for your attention