SENSORY ANALYSIS

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Part 1 : Sensory analysis as a science
Part 2 : About sensory perception
Part 3 : Coffee sensory analysis : method & vocabulary
Part 4 : Sensory analysis : Interest for GI
Part 1:

SENSORY ANALYSIS AS A SCIENCE
ORGANOLEPTIC CHARACTERISTICS MEASUREMENT

- Scientific method based on internationals standards (ISO)
- Aim: defining a link between stimulus and sensory perception
AIMS OF SENSORY ANALYSIS

• Studying preferences
• Analyzing (especially describe)

Two different methods
HEDONIC APPROACH

- Studying consumers preferences
- Naive assessors 60 to 100 people
- Representative panel of the target population
ANALYTIC APPROACH

Descriptive Test: establishing a profile
Organoleptic differences between two rices

<table>
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<tr>
<th></th>
<th>cohesion</th>
<th>firm</th>
<th>sticky</th>
<th>grain distortion</th>
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<td>riz 614</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>7</td>
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<tr>
<td>riz 485</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Legend:
- Red: riz 614
- Blue: riz 485
ANALYTIC APPROACH

Concordance between panelists: **statistics**
DESCRIPTIVE PANEL

• Anyone may be trained: motivation and availability

• Regular training to
  • Be able to name sensation: memorization of smells, flavours, textures
  • Be able to quantize (references)
SENSORY ANALYSIS AS A SCIENCE

Need of rigour in:

- Protocols
  (sampling, preparation, blind test, analyze, repetition)
- Training of panelist
- Statistics
Part 2:

ABOUT SENSORY PERCEPTION
ABOUT SENSORY PERCEPTION

Nasal Cavity

Receptors

Aroma

Taste

Tongue

Oral cavity

Food
Part 3:

COFFEE SENSORY ANALYSIS: METHOD & VOCABULARY
METHODOLOGY

1. BODUM® - 50g OF COFFEE

2. NON STIR

3. FILTER AFTER 5mn

4. STIR

SERVE

1L WATER / 95°C
METHOD OF TASTING:
3 STEPS

• Smell

• Taste all the coffees

• Retest each coffee for profile
STEP 1: SMELL

- Smell warm coffee
  Some smells disappear rapidly

- Smell intensity:
  Smell strength, good or not
STEP 2 : TASTE ALL THE COFFEES

- To catch an idea about all the coffees
INTAKE OF AIR

- Nasal Cavity
- Receptors
- Aroma
- Smell
- Oral cavity
- Taste
- Tongue
- Food
COFFEE CIRCULATE ALL AROUND THE MOUTH
STEP 3 : DESCRIBE EACH COFFEE

• Take again coffees in the order of presentation

• Note each coffee for all the descriptors (from 0 to 10)
STEP 3: DESCRIBE EACH COFFEE

- **Body**: impression of consistency, strength of aromas
  - no body (0) to hard body (10)

- **Acidity**: basic flavor (references: tartaric acid or citric acid)

- **Bitterness**: basic flavor, feeling in the whole mouth and the tongue
  - (references: quinine solution or caffeine)
STEP 3 : DESCRIBE EACH COFFEE

- **Fruity**: mature and perfume fruit flavors
- **Global Quality**: global appreciation on the coffee, take into account all sensory characteristics, typical flavors (and their intensity) and particular characteristics
Part 4:

SENSORY ANALYSIS: INTEREST FOR GI
Sensory analysis : Interest for GI
1 - IDENTIFY PRODUCT

• Characterization & identification of typology

• From feeling to the description

• Main elements influencing sensory characteristics
EXEMPLE OF IDENTIFICATION

Bali : 100 controlled samples x 2 years of picking

Three groups of coffee identified :

• acid & greenish
• acid & fruity
• bitter
EXEMPLE OF IDENTIFICATION
EXEMPLE OF IDENTIFICATION

- Main agronomic factors influencing quality:
  - Altitude
  - Shade
  - Localization
  - Variety
EXEMPLE OF IDENTIFICATION

- Interest: decision-support tool for local organization
  - Typicity of product
  - Tool to define specifications
  - Exclusion

- Coordination with agronomy, technology, teledetection, economy, farmers organization, juridical, marketing
2 – BUILDING A TOOL OF MEASUREMENT

Training of local panel:
• Multi approach method, autonomy
• Subjectivity of quality
GENERALLY SPEAKING

• Valid for all quality labels
• For countries: tools for organization & orientation on appropriate markets
• Crossing with chemical data
Integrated processes for food quality

Food quality, in all its facets, sanitary, nutritional, organoleptic, is central to the concerns of consumers, agrifood manufacturers and health specialists. A better understanding of quality throughout the chain of production, processing and distribution is necessary to satisfy their expectations.

The aim of the research unit is to develop an integrated approach for the manufacture and preservation of high quality foods in Southern countries.
PRESENTATION UMR QUALISUD

4 teams with 72 researcher from Cirad, university & Sup Agro

- Typicity, preservation & non destructive quality evaluation of crops

- Determinants of organoleptics & nutritional quality of fresh & processing products

- Stabilization & transformation processes

- Control of food chain contaminants