

# Sensory Evaluation of Olive Oil

Main differences in  
methodology



## Sensory Evaluation

objective

Sensory Analysis



subjective

Hedonic Tests

## Single Rating

- Single opinion of a consumer
- Subjective results
  - Acceptance
  - Preference
- Statistically not relevant



3

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## Group Rating

- Opinion of a group of consumers
- Influenced by each other
- Subjective results
  - Acceptance
  - Preference
- Statistically not relevant



4

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## Consumer Test

- Opinion of a large group of consumers
  - N > 60 (Minimum !)
- Demographic factors considered
  - representative
- Subjective results
  - Acceptance
  - Preference
- Statistically relevant

5

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## Objective Methods

- Difference Tests
  - duo test
  - duo/trio test
  - triangel test
- Rankings
- Profilings
  - Consens
  - konventional

6

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## Consens Profiling

- Evaluation by a panel of experts (5 – 8)
- Trained panelists
  - product characteristics
  - methodology → DIN 10967-2
- Use of DIN consensus sheet
- Objective results
  - evaluation of defined characteristics
  - use of trained senses
- Statistically relevant

7

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

### Descriptor

<b>5</b>	schwach	schwach-mittel	mittel	mittel-stark	stark
<b>6</b>	schwach	schwach-mittel	mittel	mittel-stark	stark
<b>7</b>	schwach	schwach-mittel	mittel	mittel-stark	stark
<b>8</b>	schwach	schwach-mittel	mittel	mittel-stark	stark
<b>9</b>	schwach	schwach-mittel	mittel	mittel-stark	stark
<b>10</b>	schwach	schwach-mittel	mittel	mittel-stark	stark

## Conventional Profiling

- Evaluation by a panel of experts (min. 8 – 10)
- Trained panelists
  - product characteristics
  - methodology → DIN 10967-1
- Use of DIN profile sheet
- Objective results
  - evaluation of defined characteristics
  - use of trained senses in a homogenous panel
- Statistically relevant

## Conventional Profiling

### Descriptor

1	_____		_____	
			<b>lower anchor</b>	<b>upper anchor</b>
2	_____		_____	
3	_____		_____	
4	_____		_____	
5	_____		_____	

# Profile Sheet "Paneltest"

PROFILE SHEET FOR VIRGIN OLIVE OIL

INTENSITY OF PERCEPTION OF DEFECTS:

ital.

Fusty/  
muddy sediment →

Musty-humid-  
earthy →

Winey-vinegary -  
acid-sour →

Metallic →

Rancid →

Others (specify) →

INTENSITY OF PERCEPTION OF POSITIVE ATTRIBUTES:

Fruity →

greenly  ripely

Bitter →

Pungent →

**Name of taster:** \_\_\_\_\_

**Sample code:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Comments:** \_\_\_\_\_

11
April 2nd, 2008 / Bona
11

# Competitions / Awards

Life Sciences and  
Facility Management  
ILGI Institut für Lebensmittel-  
und Getränkeinnovation

- International committee → Group of experts (3 - 4)
- Based on expert knowledge
  - product characteristics
  - terms of testing
- Use of individual profile sheet
- Mainly objective results
  - evaluation of defined characteristics
- Statistically not relevant

12
April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## Competitions / Awards

BIOL  
Ercole Olivario  
SOL d'Oro  
Feinschmecker  
DLG

[www.premiobiol.it](http://www.premiobiol.it)  
[www.ercoleolivario.org](http://www.ercoleolivario.org)  
[www.veronafiore.it](http://www.veronafiore.it)  
[www.der-feinschmecker-club.de](http://www.der-feinschmecker-club.de)  
[www.dlg.org](http://www.dlg.org)

### → Group Rating (3-4 Experts)

Leone d'Oro (Mastri Oleari)  
Mario Solinas Award  
International Olive Oil Award Zurich (IOOA)

[www.mastrioleari.it](http://www.mastrioleari.it)  
[www.internationaloliveoil.org](http://www.internationaloliveoil.org)  
[www.oliveoilaward.ch](http://www.oliveoilaward.ch)

### → Profiling (Olive Oil Panels)

13

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## International Olive Oil Award

- Evaluation by a panel of experts (min. 8 - 10)
  - Swiss Olive Oil Panel (SOP) / accredited by ISO 17025
- Regular panel training
  - product characteristics
  - methodology
    - DIN 10967-1 and VO (EG) Nr. 796 / 2002
    - resp. COI standards

14

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## International Olive Oil Award

- Use of advanced profile sheet
  - profile sheet of paneltest → VO (EG) Nr. 796/2002 resp. COI
  - validated advanced SOP profile sheet
- Objective results
  - evaluation by defined characteristics
  - use of trained senses in a homogenous panel
- Statistically relevant

## Advanced SOP Profile Sheet

Datum: \_\_\_\_\_ Prüfer-Code: G \_\_\_\_\_ Probennummer: \_\_\_\_\_

### Negative Attribute

1	fusty stichig	_____ →
2	musty modrig	_____ →
3	winey - vinegary weinig - essigsauer	_____ →
4	muddy sediment schlammig	_____ →
5	metallic metallisch	_____ →
6	rancid ranzig	_____ →
7	others (to specify) andere (zu spezifizieren)	_____ →

**Positive Attribute**

**8a** fruity  
fruchtig

Nase

	+	++	+++		+	++	+++
<b>Reifegrad der Olive</b>				<b>Geschmack / Geruch</b>			
unreif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	süß	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
reif	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gras frisch geschnitten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Nuss, Mandel, Pinie - frisch</b>				<b>Nuss, Mandel, Pinie - getr.</b>			
nussartig (frisch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	nussartig (getr.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mandelartig (frisch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	mandelartig (getr.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pinienartig (frisch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pinienartig (getr.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Früchte</b>				<b>Gemüse, Kräuter</b>			
grüner Apfel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	grüne Tomate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
reifer Apfel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	reife Tomate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
grüne Banane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Artischocke	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
reife Banane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pilze	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zitrus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Kräuter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cassis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Melone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
kandierte Früchte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<b>ggf. weitere Attribute (benennen und bewerten)</b>					+	++	+++
1 _____					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 _____					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 _____					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Life Sciences und Facility Management  
ILGI Institut für Lebensmittel- und Getränkeinnovation  
**zhaw**

## Advanced SOP Profile Sheet


**Gesamteindruck / Ausgewogenheit**

**11** Harmonie (Flavour)

negativ (total unharmonisch)      Standard      positiv (Spitzenöle)

**12** Dauerhaftigkeit

kurz      Standard      lang

18      April 2nd, 2008 / Bona            7th International Olive Congress - Zurich 2008

## Harmony

= thoroughly positive sensory impression

Under harmony we understand the degree of balance of all the positive characteristics of the olive oil being assessed. All olfactory, tactile and kinaesthetic stimuli are taken into account during assessment.

## Persistence

= thoroughly positive sensory impression

By persistence we understand the lasting nature of all the positive characteristics of the olive oil being assessed. During assessment, all olfactory, gustatory, tactile and kinaesthetic stimuli are taken into consideration.

## IIOOA Approach (1)

- 1<sup>st</sup> step

Pre-Test (Screening)

- 3 trained experts/panelists → orientation
- Screening of the intensity of fruitiness
  - mild
  - medium
  - intense
- Search for defects

→ **Aim: Selection of Oils for the Blind Tasting**

## Orientation Group

- Opinion of a small group of experts (~ 3)
- Based on expert knowledge
  - product characteristics
  - terms of testing
- Mainly objective results
  - evaluation of defined characteristics
- Statistically not relevant

## IOOA Approach (2)

- 2<sup>nd</sup> Step

### Panel-Test 1

- Swiss Olive Oil Panel (SOP) → min. 8 - 10 results / olive oil
- Blind-Tasting in the Sensory Lab → 3 digit coding and „latin square“ presentation design
- advanced profile sheet

→ **Aim:** Selection of oils for the final evaluation

23

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008



24

April 2nd,

## IIOOA Approach (3)

- 3<sup>rd</sup> Step

- Panel-Test 2 (concluding / final evaluation)

- Swiss Olive Oil Panel (SOP) → min. 8 -10 results / olive oil
    - Blind-Tasting → 3 digit coding and „latin square“ presentation design
    - advanced profile sheet

→ **Aim: Definition of winning oils in categories**

→ Golden Olive / Silver Olive / Award

## IIOOA Approach (summary)

- Screening

- Intensity of Fruitiness
  - Defects ?

- Paneltest (1 /2)

- Defects ? → „basics“
  - Fruitiness / Bitterness / Pungency

- + Advanced Sensory Evaluation

- Harmony and Persistence → „added value“
  - Positive Characteristics

## OLIO Approach

- Evaluation by a panel of consumers (n = 90)
- location: Gourmesse / ZH → [www.gourmesse.ch](http://www.gourmesse.ch)
- Use of 9 point hedonic scale
  - acceptance test
  - overall liking
- Subjective results
- Statistically relevant

27

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008

## IOOA + OLIO Approach (summary)

- (1) Screening
- (2) Paneltest (1 / 2)
  - Classification → „basics“
  - + Advanced Sensory Evaluation
    - Detailed Description of Sensory Characteristics → „added value 1“
- (3) Consumer Test
  - Acceptance → „added value 2“
  - Preference Mapping

28

April 2nd, 2008 / Bona



7th International Olive Congress - Zurich 2008