Defects in Olive Oil

NY, May 2025

How to recognize quality?

There is a specific method to convert something "subjective" into something "objective"

Figure 1

PROFILE SHEET FOR VIRGIN OLIVE OIL

INTENSITY OF PERCEPTION OF DEFECTS

Fusty/muddy sediment _____

Musty/humid/earthy _____

Winey/vinegary acid/sour _____

Frostbitten olives (wet wood) _____

Rancid _____

Other negative attributes: _____

Descriptor: Metallic ☐ Dry hay ☐ Grubby ☐ Rough ☐ Brine ☐ Heated or burnt ☐ Vegetable water ☐ Esparto ☐ Cucumber ☐ Greasy ☐

INTENSITY OF PERCEPTION OF POSITIVE ATTRIBUTES

Fruity _____ Green ☐ Ripe ☐

Bitter _____

Pungent _____

Name of taster: Taster code:

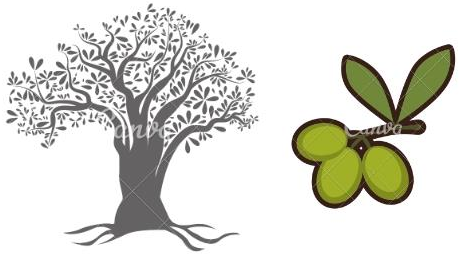
Sample code: Signature:

Date:

Comments:

IOC standard

Remember that the IOC standard talks about fruitiness and DEFECTS



Virgin Olive Oil ← **Olive juice** ←  → **Waste** → **Pomace**

Extra virgin olive oil

FFA ‹0,8
PER ‹20
FM ›6
DM 0

Virgin olive oil

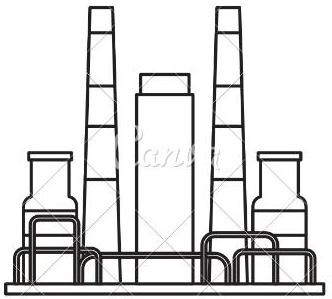
FFA ‹2
PER ‹20
FM ›0
DM ‹3,5

Ordinary virgin olive oil

FFA ‹3,3
PER ‹20
FM N/A
DM 3,5 - 6

Virgin lampante olive oil

FFA ›3,3
PER No limit
FM N/A
DM ›6




Free fatty acid:
don't get confused with this
LA CORUÑA
Aceite de Oliva
VIRGEN EXTRA
Castell de Ferro
Aceite de oliva
500 ml
Carbonell
VIRGEN EXTRA
ACEITE DE OLIVA VIRGEN EXTRA
Sabor intenso en tus alliños
PRODUCTO DE ESPAÑA
250ml
La Española
500cm
DESDE 1878
Sublime
ACEITE DE OLIVA ESPAÑOL
250 ml
250cm
VIRGEN EXTRA
ACEITE DE OLIVA
Extracción en frío
IDEAL PARA ADEREZOS
Original
INTENSIDAD
Premier
Oliva
Aceite de Oliva Extra Virgen
Importado de España
250 cm³
ACEITE DE OLIVA
VIRGEN EXTRA
RS
CALIDAD PREMIUM
PRODUCTO DE ESPAÑA

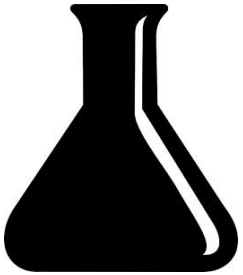
Organoleptic and Chemistry

Sensory and Chemistry are complementary

Organoleptic…

- Detects small molecules (compounds) which confer aroma (volatiles) and flavor (polyphenols)
- Assesses complex compound mixes and in tiny amounts (ppm to ppb; E.g. g in 1000 to 1 million kg)
- Detects poor fruit quality/handling and bad milling (fusty, musty, winey…)
- Cannot detect Peroxides (PV), acidity (FFA) or blending with refined oils

The human senses are still the most perfect tasting machine

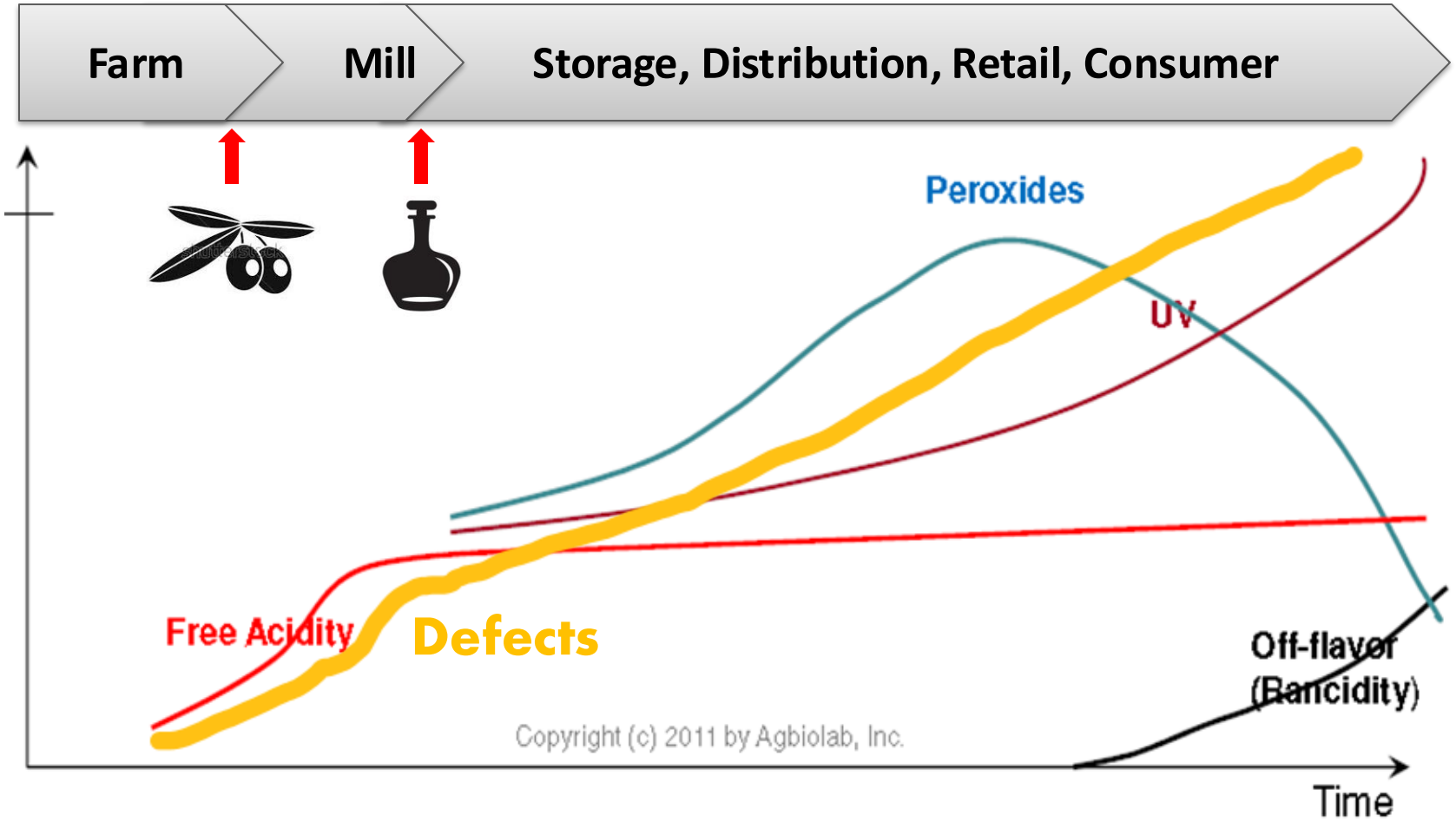


Correlations…

- Rancidity mostly correlated with K232
- Robustness and bitterness /astringency/pungency mostly correlated with specific polyphenols

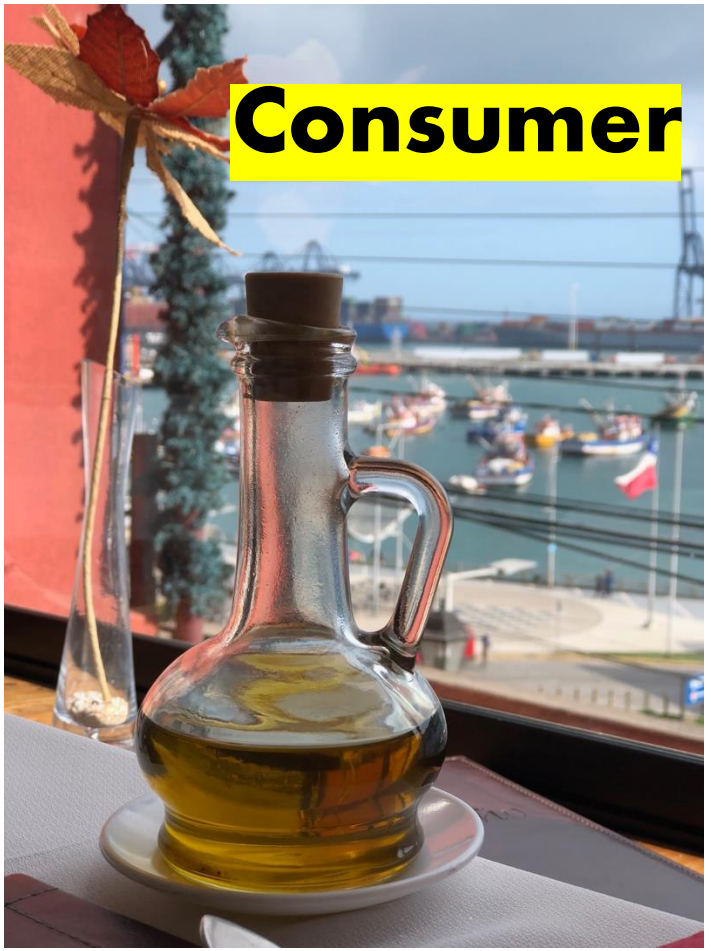
Source: Carlos Machado, Agbiolab

How do parameters evolve?



Source: Carlos Machado, Agbiolab

We all make mistakes...



Negative attributes

(COI/T.20/Doc. No 15/Rev. 10 2018 METHOD FOR THE ORGANOLEPTIC ASSESSMENT OF VIRGIN OLIVE OIL)

If you can't describe one of these specifics sensations, you can't use the word DEFECT

Fusty / muddy sediment	Characteristic flavour of oil obtained from olives piled or stored in such conditions as to have undergone an advanced stage of anaerobic fermentation, or of oil which has been left in contact with the sediment that settles in underground tanks and vats and which has also undergone a process of anaerobic fermentation.
Musty - humid - earthy	Characteristic flavour of oils obtained from fruit in which large numbers of fungi and yeasts have developed as a result of its being stored in humid conditions for several days or of oil obtained from olives that have been collected with earth or mud on them and which have not been washed.
Winey – vinegary – acid sour	Characteristic flavour of certain oils reminiscent of wine or vinegar. This flavour is mainly due to a process of aerobic fermentation in the olives or in olive paste left on pressing mats which have not been properly cleaned and leads to the formation of acetic acid, ethyl acetate and ethanol.
Rancid	Flavour of oils which have undergone an intense process of oxidation.

Frostbitten olives (wet wood)	Characteristic flavour of oils extracted from olives which have been injured by frost while on the tree.
Heated or burnt	Characteristic flavour of oils caused by excessive and/or prolonged burnt heating during processing, particularly when the paste is thermally mixed, if this is done under unsuitable thermal conditions.
Hay–wood	Characteristic flavour of certain oils produced from olives that have dried out.
Rough	Thick, pasty mouthfeel sensation produced by certain old oils.
Greasy	Flavour of oil reminiscent of that of diesel oil, grease or mineral oil.
Vegetable water	Flavour acquired by the oil as a result of prolonged contact with vegetable water which has undergone fermentation processes.
Brine	Flavour of oil extracted from olives which have been preserved in brine.
Metallic	Flavour that is reminiscent of metals. It is characteristic of oil which has been in prolonged contact with metallic surfaces during crushing, mixing, pressing or storage.
Esparto	Characteristic flavour of oil obtained from olives pressed in new esparto mats. The flavour may differ depending on whether the mats are made of green esparto or dried esparto.
Grubby	Flavour of oil obtained from olives which have been heavily attacked by the grubs of the olive fly (Bactrocera oleae).
Cucumber	Flavour produced when an oil is hermetically packed for too long, particularly in tin containers, and which is attributed to the formation of 2,6-nonadienal.

Positive attributes

(COI/T.20/Doc. No 15/Rev. 10 2018 METHOD FOR THE ORGANOLEPTIC ASSESSMENT OF VIRGIN OLIVE OIL)

Fruitness

Set of olfactory sensations characteristic of the oil which depends on the variety and comes from sound, fresh olives, either ripe or unripe. It is perceived directly and/or through the back of the nose.

Bitterness

Characteristic primary taste of oil obtained from green olives or olives turning colour. It is perceived in the circumvallate papillae on the "V" region of the tongue.

Pungency

Biting tactile sensation characteristic of oils produced at the start of the crop year, primarily from olives that are still unripe. It can be perceived throughout the whole of the mouth cavity, particularly in the throat.

Rule #1: EVOO has to be CLEAN

See you tomorrow!
(And don´t hate me... I suffer too)