The Good, The Bad, The Ugly of Olive Oils

Helen Taylor
Trudie Michels

AOA National Conference October 27th 2023

Helen Taylor

- Food Technologist
- IOC Trained Panel Supervisor
- Previous AOOSP Panel Leader
- AOOSP member
- Professional Olive Oil Sommelier
- Head Judge Sydney Fine Foods- Olive Products
- Head Judge Australian International Olive Awards
- Wide Show Judging experience overseas and within Australia

Trudie Michels

- Accomplished olive oil, food and wine specialist
- Masters degree in Consumer Behaviour and EVOO Consumption
- Background in marketing, hospitality and education.
- Chief Judge Royal Adelaide Olive Awards since 2014
- Competition Convenor & Chief Steward of Australian International Olive Oil Awards since its inception
- Internationally experienced judge and panel leader in Japan and New Zealand
- Co-founder of Redisland Australia in 2003 - the first Australian extra virgin olive oil on Australian supermarket shelves.

Some of what you will learn in this workshop:

- The basics of olive oil sensory evaluation
- What are the positive sensory attributes of olive oil
- What are the sensory defects in olive oil
- Mechanics of how to taste olive oil

What is Sensory Analysis?

A scientific discipline used to evoke, measure, analyse and interpret reactions to those characteristics of food and materials as perceived by the somesthesic senses and well as those of: sight; smell; taste; hearing and touch.

Sensory Analysis

- The perfect instruments for sensory analysis are PEOPLE.

  • People can be trained (panel assessors)

  • or not trained (consumers)

5 Main Senses

- Sight (eyes) ------ colour, appearance (not used for OO)
- Smell nose) ------ aroma, fragrance
- Taste (tongue) ------ flavor
- Sound (ears) ------ consistence (not used for OO)
- Touch (tongue, teeth, palate) ------ fluidity, density

Smell

- 80 % of tasting is done in your nose.
- The Olfactory nerve transmits information from sensory receptors in the mouth and nasal cavity to the brain.
- The brain will interpret this information and allow the body to determine a sense of smell.
- Olfactory sensations also contribute to long lasting memories and emotions.

Taste

- Tastebuds are combination of basal cells, structural cells and between 10 and 50 taste receptor cells.
- Taste receptor cells are renewed every 9-10 days.
- Some receptors contain proteins that bind with chemicals in our food.
- Others have ion channels that are activated by different chemicals.
- Once detected the information is conveyed to our brain, where taste is perceived.
- Average adult has between 2000 and 8000 tastebuds (lge and sml).

Five Basic tastes

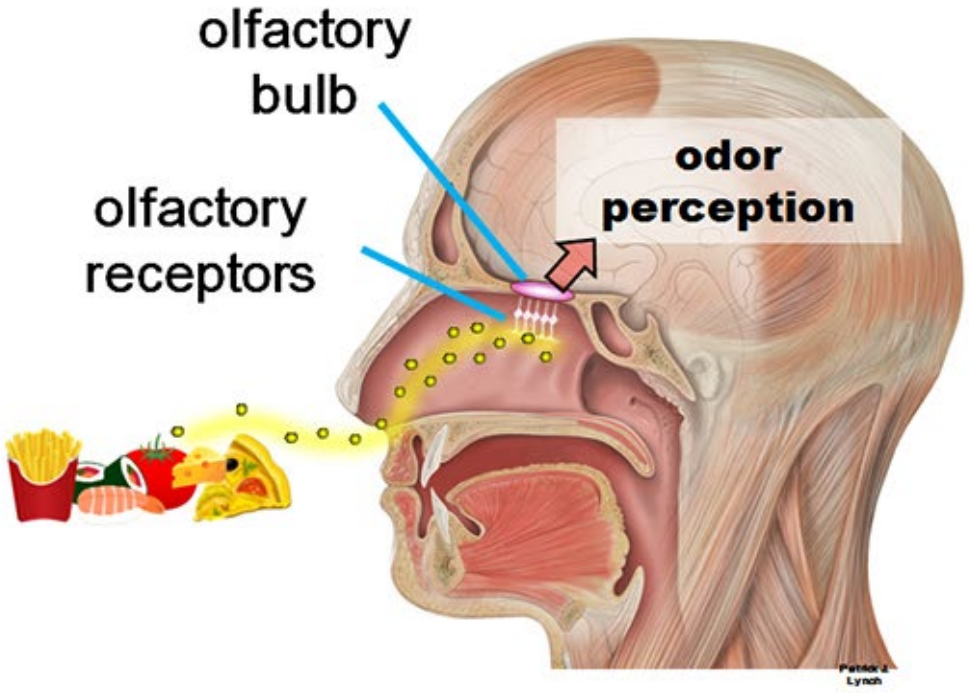
- Sweet - sugars, alcohols, proteins, artificial sweeteners
- Sour - acidic foods, Hydrogen (H+) ions
- Salty - Sodium chloride (NaCl)
- Bitter - Alkaloids, Flavonoids, Terpenes, Glucosinolates, Polyphenols
- Savoury - (Umami) Glutamic acid, Aspartic acid

- Here are some taste sensations vying for a place at the table as a sixth basic taste:

  Calcium, Kokumi (mouthfullness), Piquance, Coolness, Fat, Metallicity and Carbon Dioxide.

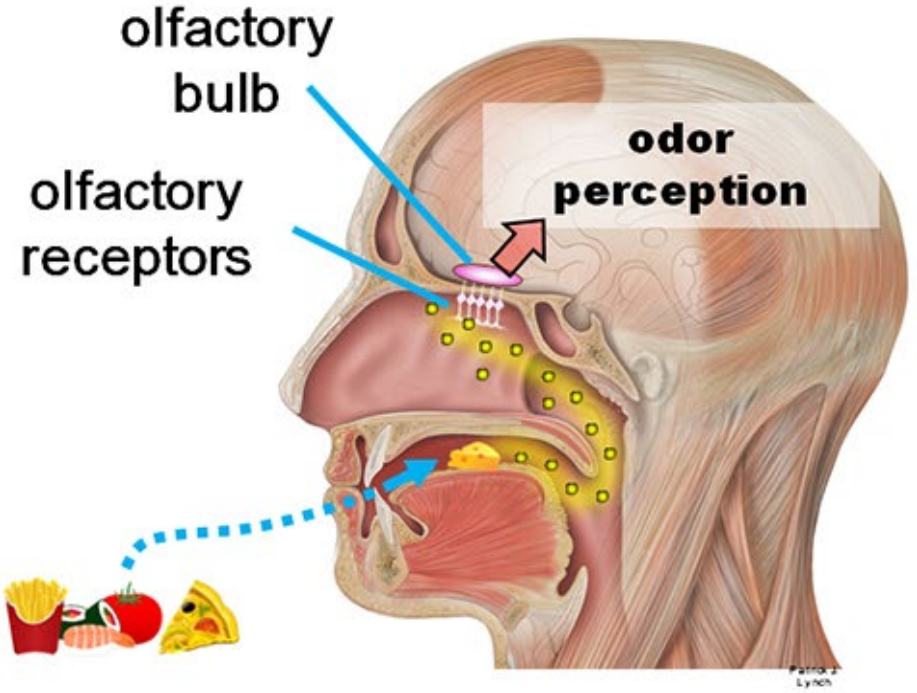
NB: Not actually true that there is only <u>one</u> area of the tongue responsible for a particular taste sensation.

Orthonasal



'out-there'

Retronasal



'in-the-mouth'

The nose and the mouth are connected

What is Virgin Olive oil?

Virgin Olive oil is the oil obtained solely from the fruit of the olive tree (Olea europaea L.) by only mechanical or other physical processes, under conditions that do not cause any alteration to the oil and which has not undergone any treatment other than rinsing, decanting, centrifugation and filtration.

This excludes any oils obtained by using solvents, chemical or biochemical adjuvants, or by re-esterification processes, and excluding any blends with oil of any other kind.

Positive Attributes of Virgin Olive Oil

Fruity

Bitterness

Pungency

Positive Attributes of Olive Oil

- **Fruity** - 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 in the mouth and/ or through the back of the nose.

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 10 2018)

Positive Attributes of Olive Oil

- **Bitter** - 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.

- Not to be confused with sour

  Coffee is **Bitter**

  Lemon is **Sour**

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 910 2018)

Positive Attributes of Olive Oil

- **Pungent** - 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.

- Not to be confused with bitter
- **Bitter** is a flavour
- Pungency is a physical warm sensation – Chilli is **Pungent**

- (IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 9 2017 p3)

Positive Attributes of Olive Oil

Using the IOC tasting sheet all attributes are scored out of ten.

According to the intensity of perception:

Fruitiness

- *Robust*, when the median of the attribute is more than 6.0;
- Medium, when the median of the attribute is between 3.0 and 6.0;
- Delicate, when the median of the attribute is less than 3.0.

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 910 2018)

Tasting Technique

Tasting Conditions

- Taste in a quiet, clean, odourless, airy place.
- Avoid any strong smelling cosmetics, perfumes, aftershave or lipstick.
- Avoid eating or drinking about 1 hour before tasting – esp coffee.
- Limit the number of oils tasted – palate fatigue.
- Taste the milder, less bitter oils first, working up to the more robust oils.
- Have water and apple slices available to cleanse the palate between oils.
- There are many free tasting resources available to help with descriptors.

Tasting Technique - Aroma

- Pour about 10 –15 mls of oil into a small cup.
- Warm oil in the palm of your hand, sealing the top with your other hand. The ideal temperature is 28°C – lukewarm.
- Once warmed swirl the oil in the cup. This increase the surface area of the oil and allows more volatiles to be released.
- Lift your top hand and quickly smell the oil. Sniff vigorously.
- What does it smell like?. Is it fresh or tired and flat? What type of fruit characters are there? Are they intense, interesting and complex? Or closed and simple?
- Record what the aroma is, or what the aroma reminds you of.
- Try and determine all the aromas before tasting.

Tasting Technique - Flavour

- Sip approximately 3 mls of the oil.
- Wait – Allow the oil to sit on your tongue for several seconds to warm the oil to body temperature.
- Aspirate the oil – hold the tip of your tongue to the roof of your mouth, and suck in air through your slightly open mouth. Aspiration allows the oil to partially atomise which releases more flavour profiles and gets the oil to the back of the mouth for the retronasal effect. Breathe out through your mouth.
- Bitterness and pungency are better perceived at the back of the tongue and soft palate. For the best result a small amount of oil should be swallowed.

Tasting Technique - Flavour

- Spit out the oil and record the amount of flavour, bitterness, pungency and texture and if the flavour reflects the aroma.
- Wait about 30 secs. Record the length of the flavour, bitterness, pungency and overall complexity of the oil.
- Rinse your mouth with water and apple if required to cleanse the palate for the next sample.
- Take as much time as you need between samples to give each the attention it deserves.

Taste Oils

Taste Oils

- Taste oils
- Record impressions
  - Fruity - Intensity and Comments
    - Aroma
    - Flavour
    - Green/ Ripe
  - Bitter - Intensity and Comments
  - Pungency - Intensity and Comments
  - Other impressions
    - Mouth Feel
    - Transfer- from nose to palate

Negative Attributes of Olive Oil

Common Defects:

- Fusty/ Muddy Sediment
- Musty/ Humid/ Earthy
- Winey/ Vinegary/ Acid/ Sour
- Frostbitten
- Rancid

Negative Attributes of Olive Oil

Rare Defects:

- Metallic
- Dry hay
- Grubby
- Rough
- Brine
- Heated or Burnt
- Vegetable water
- Esparto
- Cucumber
- Greasy

Negative Attributes of Olive Oil

1. Fusty

Characteristic flavour of oil obtained from olives piled or stored in such conditions as to have undergone an advanced stage of anaerobic fermentation

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 9 2017 p1)

Negative Attributes of Olive Oil

Fusty

1. Body Odour
2. Sweaty Gym
3. Smelly Sweaty Socks
4. Overripe/rotten fruit (banana/red apple)
5. Fuel Oil
6. Tapenade
7. Olive mill waste pond
8. Pomace paste

Negative Attributes of Olive Oil

2. Muddy Sediment

Characteristic flavour of oil which has been left in contact with the sediment that settles in tanks and vats and which has also undergone a process of anaerobic fermentation.

1.IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 9 2017 p1)

Negative Attributes of Olive Oil

2. Muddy Sediment

1.Blue Cheese
2. Salami / Bacon
3. Baby's Vomit / Sourdough
4. Sour / Off Milk
5. Barn Yard
6. Burnt Match
7. Leather
8. Sewer Dregs
9. Animal Waste
10. Horse Faeces

Negative Attributes of Olive Oil

3. 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.

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 9 2017 p1)

Negative Attributes of Olive Oil

3: Musty/Humid/Earthy

1. Stale Mushrooms
2. Mouldy Vegetables
3. Earthy
4. Mould
5. Wet Carpet / Humid Basement
6. Old Leather
7. Rotten potato

Negative Attributes of Olive Oil

4. 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.

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15

Negative Attributes of Olive Oil

4. Winey/ Vinegary/ Acid/ Sour

1. Fortified wine
2. Off Wine
3. Vinegar
4. Acetone / Solvent Like
5. Nail Polish Remover
6. Silage
7. Yeasty

Negative Attributes of Olive Oil

5. Frostbitten Olives/ Wet wood

Characteristic flavour of oils extracted from olives which have been injured by frost while on the tree.

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 9 2017 p2)

Negative Attributes of Olive Oil

5. Frostbitten Olives/ Wet Wood

1. Stewed Fruit
2. Fresh Cut Mushroom
3. Wet Wood
4. Vanillic Acid / Vanilla
5. Sweet Aroma
6. Muddled Aroma
7. Wet Hay

Negative Attributes of Olive Oil

6. Rancid

Flavour of oils which have undergone an intense process of oxidation.

(IOC Method for the Organoleptic Assessment of Virgin Olive Oil COI/T.20/Doc. No 15/Rev. 9 2017 p2)

Negative Attributes of Olive Oil

6. **Rancid:**
    1. Stale Nuts
    2. Off Butter
    3. Fish & Chips
    4. Play Dough
    5. Old Lipstick
    6. Linseed Oil
    7. Old Paint
    8. Putty
    9. Zinc Cream

Negative Attributes of Olive Oil

Heated or Burnt

1. Boiled Vegetables
2. Beeswax Candles
3. Burnt wood
4. Burnt Rubber

Hay-Wood

1. Dry Hay
2. Damp Straw
3. Pips
4. Wood

Taste Oil

Taste Oils

- Taste oils
- Record impressions
  - Fruity - Intensity and Comments
    - Aroma
    - Flavour
    - Green/ Ripe
  - Bitter - Intensity and Comments
  - Pungency - Intensity and Comments
  - Other impressions
    - Mouth Feel
    - Transfer- from nose to palate

Take home message to producers today -

Taste your oil regularly!