

Filtration

AN INDISPENSABLE PRACTICE FOR QUALITY AND SHELF LIFE



Why is it needed to filter?

- ▶ To remove moisture content. The IOC suggest to have a maximum of 0.2% of moisture content to guarantee a good shelf life. When olive oils come out of the final separator have a higher amount. In mills where the oil is filtered straight from the decanter, the moisture content is more than double, and the charge of sediments, quite high as well.
- ▶ Leaving too much water in the oil will cause hydrolysis (the lipase enzyme increases acidity –FFA- by freeing fatty acids from the triglycerides). It can also produce fermentation from yeasts (winey).
- ▶ Sediments are to be removed too. Too many sediments in prolonged contact with olive oil causes the defect of muddy sediment (it brings a sort of dirt flavor to the oil, and/or very intense bad flavors and odors as manure, sewage, etc.).
- ▶ Micro-flora (mostly yeast), will be present as long as they're water and sediments and can colonize the environment, leading to defects (muddy sediment, winey, rough, rancid).

Enzymes

- ▶ Filtration is done for things we see, as sediments and vegetable water, and for things we don't see, as enzymes.
- ▶ Negative enzymatic processes are favored by the high water content and they're triggered very rapidly.
- ▶ The most efficient filtration is done within 24 hrs. That's also when the oil is at ideal temperature for filtration (22-26 C/ 72-79 F).
- ▶ Filtering prior to bottling can even be counter-productive, remixing sediments with clean oil.
- ▶ Not all forms of filtration produce the same results. For quality purposes, cellulose plates are what top producers use.

The traditional approach

- ▶ Unfiltered was taken, often with pride, as proof of wholesomeness and un-adulteration.
- ▶ Still today, most producers use natural sedimentation to decant the olive oil in the tanks, and then rack (they transfer the oil to another, clean tank), or remove the water + sediments through a faucet in the bottom of the tank.
- ▶ This is much better than nothing though it does a partial job in terms of removing sediments and humidity, and does not stop the negative enzymatic processes.

Is there a loss of positive attributes and phenols due to filtration?

- ▶ Some phenols are lost. Which ones? The ones that are more hydrophilic, and therefore, not as potent as the ones that get protected by filtration. As a trade-off, a good one.
- ▶ Organoleptic positive attributes are rather gained than lost.
- ▶ Some mild odors from the vegetable water are lost, though those are not positive.
- ▶ The same can be said for some flavors coming from sediments and vegetable water.

What does filtration accomplish?

- ▶ Stability of the product, durability.
- ▶ Removal of matter (sediments, vegetable water, mucilage) that has a negative evolution and quickens decomposition.
- ▶ It offers protection of the precious phenols and polyphenols and therefore, a longer shelf life.
- ▶ It makes the olive oil leaner, crispier, more elegant.
- ▶ Perfumes get neater, cleaner and protected. Perfumes last longer in filtered oils.
- ▶ Unfiltered oils oxidize more rapidly, becoming thicker over a short time, and eventually becoming more viscous and with a more pronounced greasy mouth feel.

Can good racking match the benefits of filtration?

- ▶ First of all, we need more studies, more statistics to know better.
- ▶ Good racking is also unusual. In most cases, racking begins too late and it's not followed up tightly.
- ▶ There are some good oils of quality when good racking takes place. So far they're exceptions, not the rule. However, it's a high risk system and in the long term, it does not accomplish the same shelf life of a filtered oil, and very importantly, these olive oils, even when good, are not as clean as filtered ones (mouthfeel sensation).

Economics. Pros and cons

- ▶ **Cons:**

- ▶ Filtration implies a loss of olive oil to the filters(at around 1-1.5%).
- ▶ Filter pads are expensive.
- ▶ It requires quality attention and a skilled, trained worker. In small & medium scale productions can be done while milling.

- ▶ **Pros:**

- ▶ Once filtered, the oil is ready to be bottled.
- ▶ Racking is no longer needed, saving labor time.
- ▶ Filtered oil leaves tanks way cleaner than unfiltered oil.
- ▶ It prolongs the E.V.O.O. category.

Two types of paper

- ▶ The majority of the filter pads recommended is of 15 microns (A9). These pads catch most of the bigger sediments and a good deal of the moisture content.
- ▶ The 1/3 of the pads of a tighter filter pads can be of 12 microns (A15), and not only brightens the olive oil, it guarantees reducing moisture and the smaller sediments.

Filter with two types of paper: “Sgrossante”(2/3) and “Clarificante” (1/3)



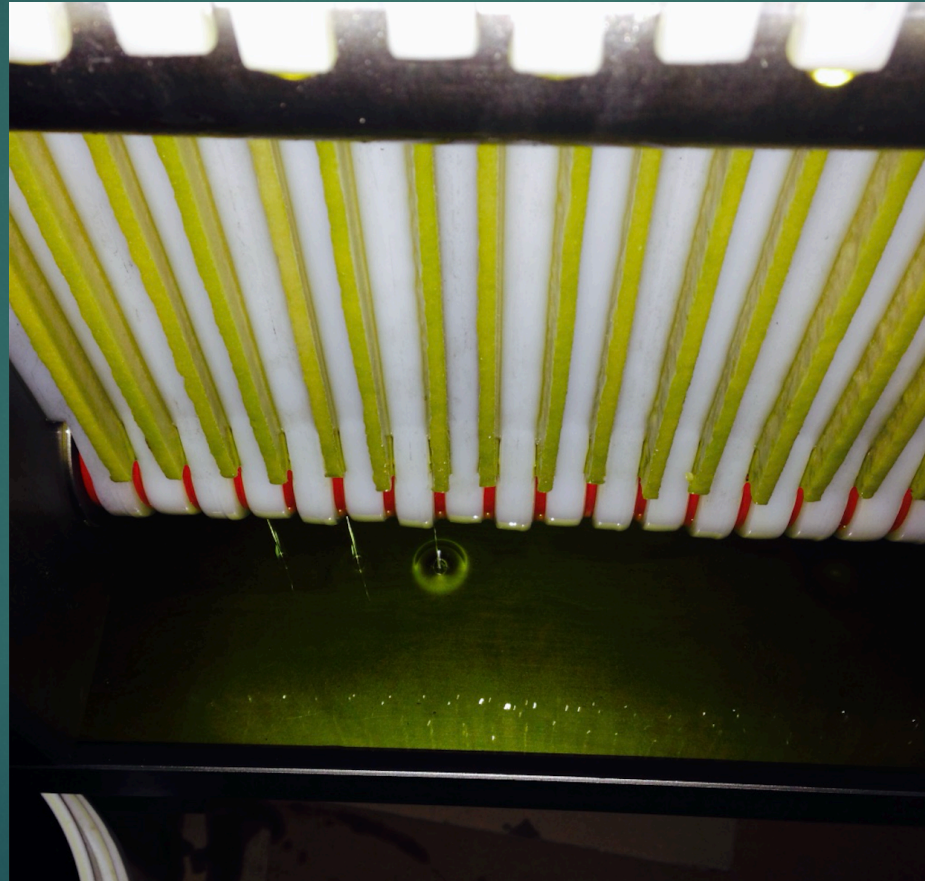
Filter



Shortened filter for smaller quantities



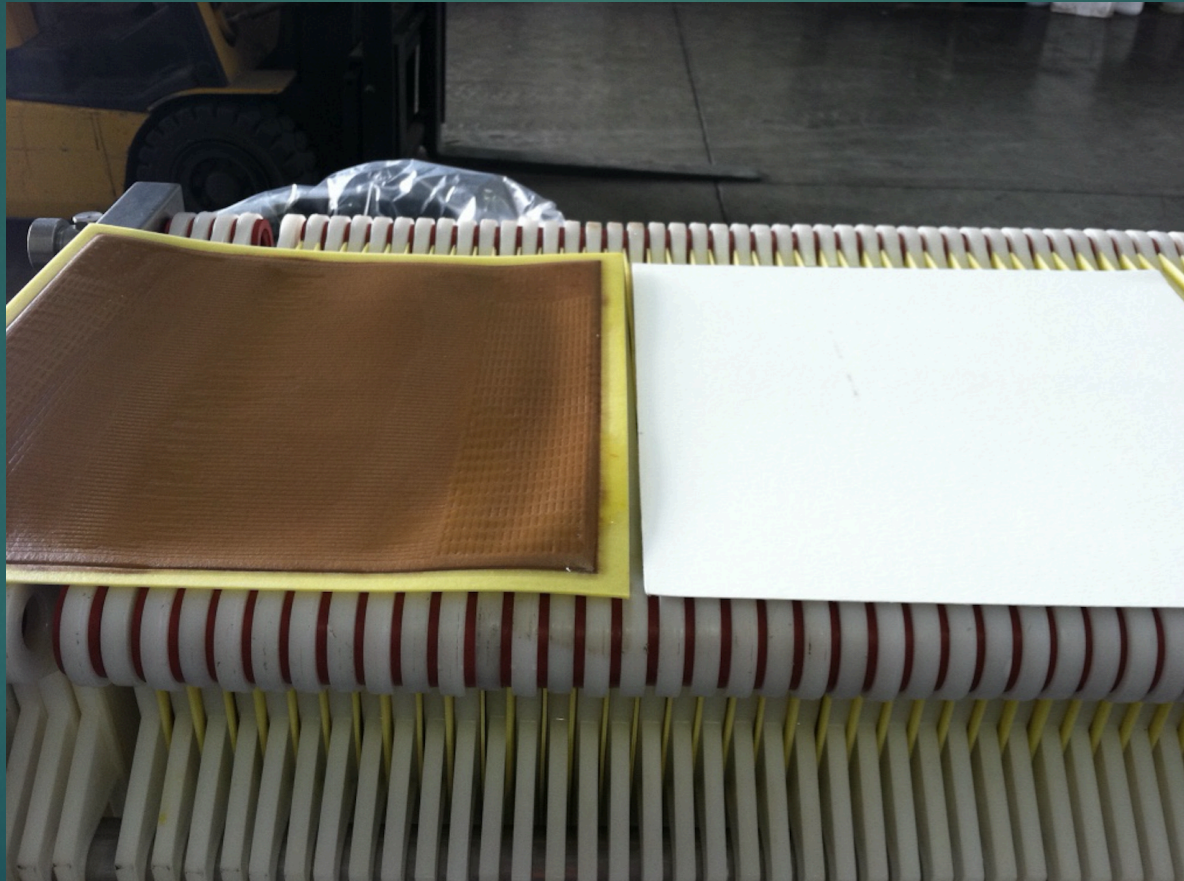
Filter



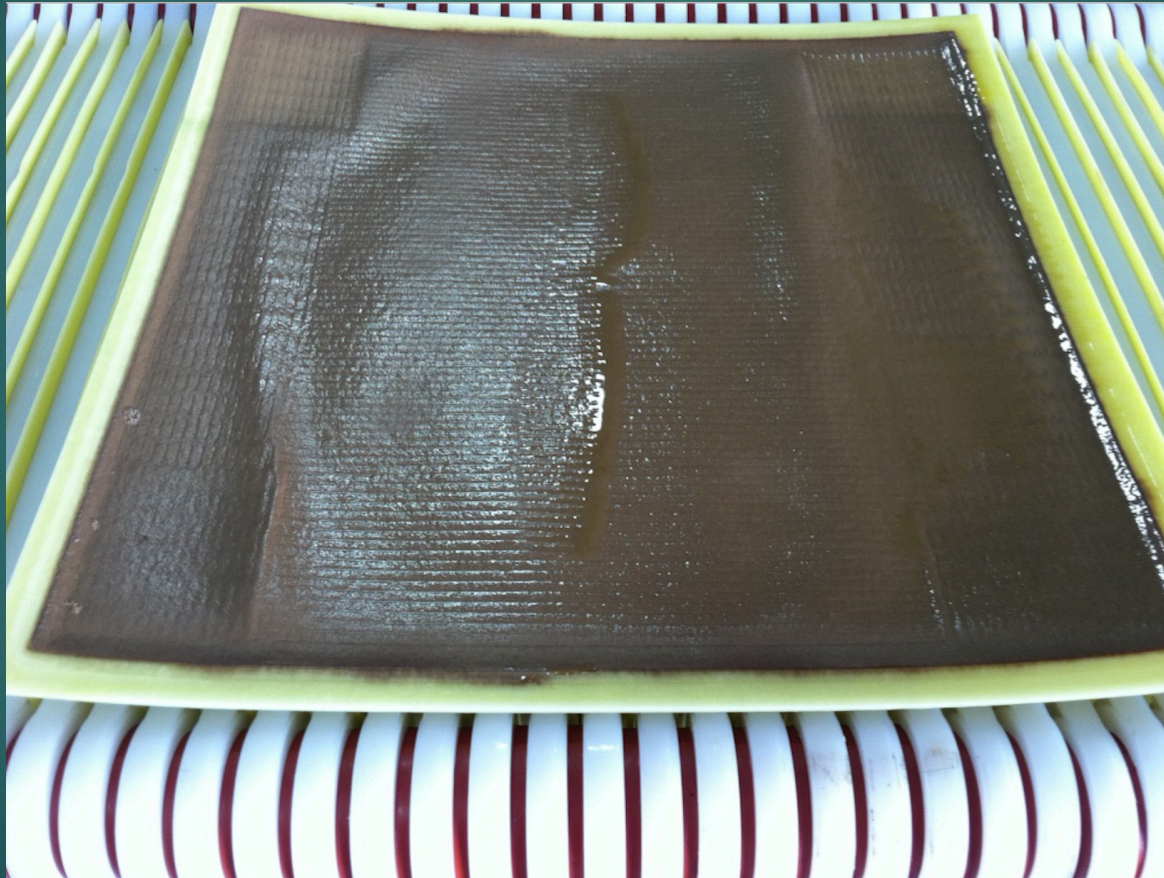
Pre-filter



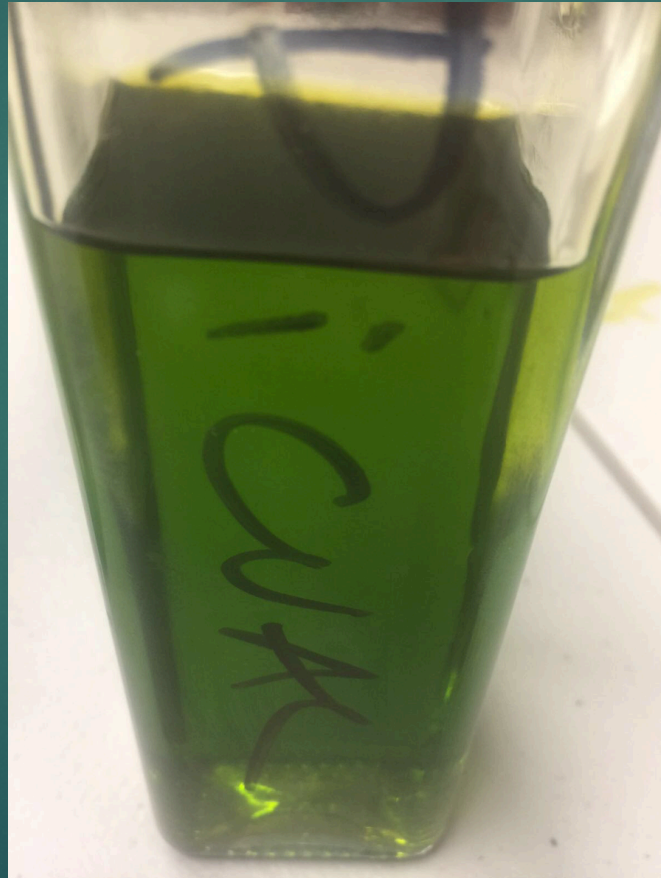
Filter- Cellulose plates before and after filtration



Filtering- Cellulose paper after filtration



Filtering- Improvement of color



Filtering, improvement of color



Filtering- Improvement of color- The cloudier one, on the left, will lose color sooner over time.

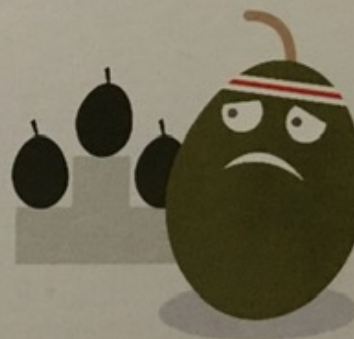


NON È TUTTO OLIO QUELLO CHE LUCCICA

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Chi ben comincia non è detto che finisca bene.

Un olio non filtrato
non è un olio puro.



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Olive oils worth knowing

- ▶ Fattoria Altomena
- ▶ Fattoria Ramerino
- ▶ I greppi di silli
- ▶ Balduccio
- ▶ Quattrociocchi
- ▶ Tittone
- ▶ Cutrera
- ▶ Intini
- ▶ Mimi
- ▶ Madonna dell Olivo
- ▶ Crudo

Olive oil worth knowing

- ▶ Finca La Torre
- ▶ Oro del Desierto
- ▶ Almazaras de la Subetica
- ▶ Oro Bailen