

# Is Your Olive Oil Fake?

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

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## STORY AT-A-GLANCE

- › The popularity of the Mediterranean diet made olive oil a \$16 billion-a-year industry in 2016. In 2022 it's down slightly to \$11 billion due to problems with olive production, but it's still a robust industry. Unfortunately, this popularity has also led to massive fraud and corruption
- › Even "extra virgin" olive oil is often diluted with other types of less expensive oils, including hazelnut, soybean, corn, sunflower, palm, sesame, grape seed and/or walnut. These added oils will not be listed on the label
- › Tips on how to identify high-quality olive oil include buying from specialty retailers that allow you to taste it first. Guidance on what to look for is included. Taste and smell are factors by which you discern authenticity

**This article was previously published December 17, 2016, and has been updated with new information.**

Consumption of olive oil has increased more than 10-fold in the U.S. over the past 35 years, from 29 metric tons (MT) in 1980 to 327 MT in 2015.<sup>1</sup> The popularity of the Mediterranean diet made olive oil a \$16 billion-a-year industry in 2016. In 2022 it's down slightly to \$11 billion<sup>2</sup> due to problems with olive production, but it's still a robust industry. Unfortunately, this popularity has also led to fraud and corruption, as CBS News first revealed in 2016.<sup>3,4</sup>

You would have thought the industry would have cleaned up its act in the years since, but the fraud is still rampant in 2022, with regulators in Spain announcing in April 2022 that they had found at least 10 different products that contained other vegetable oils in bottles labeled as extra virgin olive oil.<sup>5</sup> A month later, in May 2022, Italian police seized 2.3 million liters of oil that failed quality and content tests.<sup>6</sup> In all, 27% of the Italian oils tested were not pure, extra virgin olive oil.

In his book, "Real Food/Fake Food," Larry Olmsted, an investigative journalist and food critic, reveals an in-depth story on the dark side of this otherwise healthy food. Olives and olive oil are well-known for their many health benefits, especially for your heart,<sup>7</sup> but using adulterated olive oil will hardly do your health any favors.

In general, people believe the U.S. Food and Drug Administration is policing and regulating food fraud, but that's actually not the case. Its primary focus is tracking food-related disease outbreaks and making sure the ingredient label is accurate and. The FDA does little in terms of preventing illegally adulterated foods from being sold.

## **Vast Majority of Olive Oil Is Adulterated**

When it comes to olive oil, tests reveal anywhere from 60 to 90% of the olive oils sold in American grocery stores and restaurants are adulterated with cheap, oxidized, omega-6 vegetable oils, such as sunflower oil or peanut oil, or non-human grade olive oils, which are harmful to health in a number of ways.<sup>8</sup>

Even "extra virgin" olive oil is often diluted with other less expensive oils, including hazelnut, soybean, corn, sunflower, palm, sesame, grape seed and/or walnut. These added oils will not be listed on the label, nor will most people be able to discern that their olive oil is not 100% pure.

Chances are, you've been eating poor-quality olive oil so long — or you've never tasted a pure, high-quality olive oil to begin with — you don't even realize there's something wrong with it.

In recent years, the industry-wide corruption has prompted class action lawsuits against several olive oil companies. For example, in March 2014, a suit was filed against a company selling a product labeled "pure olive oil" that was actually olive pomace oil.

Olive pomace is the solid residue left over from traditional olive oil production, which is then treated with chemical solvents (often hexane) and extremely high temperatures to extract oil that's typically blended into other low quality olive oils to add flavor. Since the resulting product isn't edible, it has to be further refined with edible oils before it is fit for consumption.<sup>9</sup>

In December, 2015, Italian authorities also shut down a massive fraud ring in Puglia, involving 12 different olive oil companies.<sup>10</sup>

## **Time to Rethink Italian Quality**

Italy is world-famous for its high-quality extra virgin olive oil, but it would be a mistake to think that just because an olive oil comes from Italy it must be authentic and high-quality. As explained by Olmsted, most of the olive oil exported from Italy is not their best product.

Italy does not produce enough extra virgin olive oil to meet even its own domestic demand, so very little of its highest quality oil ever leaves the country.

Also, just because it comes from Italy does not mean it was grown and made there, because Italy is also the world's largest importer of olive oil. They buy oil from several countries, including Tunisia, Syria, Morocco and Spain, which is then blended, bottled and exported.

A label that says "bottled in Italy" is technically true, but it says nothing about where the olives were grown or pressed, or whether it's been mixed with other oils.

## **Rise of the Agromafia**

In January 2016, 60 Minutes (below) revealed how the olive oil business has been corrupted by what the Italians refer to as the "agromafia."<sup>11</sup>

According to journalist Tom Muller, featured in the 60 Minutes' report, the mafia has infiltrated virtually all areas of the olive oil business, including harvesting, pricing, transportation and the supermarkets.

In essence, they've infiltrated the entire food chain "from farm to fork," to use Muller's phrase. The fraud is so massive, at least half of all the extra virgin olive oil sold in Italy is adulterated as well. That's pretty astonishing, considering the reverence Italians have for olive oil.

In the U.S., your chances of getting the real McCoy is even slimmer, with as much as 90% of it being adulterated. Quality can also be seriously compromised by the fact that olive oil is shipped by boat, which takes a long time.

It is then stored and distributed to grocery stores, where the oil may sit on the shelf for another several months. As explained by Olmsted, olive oil is similar to fresh-squeezed orange juice, meaning it has a rather short shelf life.

Pure olive oil that's minimally processed contains health-promoting antioxidants and phenolics, provided the oil hasn't oxidized – and oxidation is an enormous risk for olive oil. By the time you buy and use it, the olive oil may already be on the verge of going bad.

## **'Use By' and 'Sell By' Dates Are Meaningless**

Unfortunately, the "use by" or "sell by" date on the bottle really does not mean a whole lot, as there's no regulation assuring that the oil will remain of high quality until that date. The date you really want to know is the "pressed on" date or "harvest" date, which are essentially the same thing because olives go bad almost immediately after being picked.

They're pressed into olive oil basically the same day they're harvested. High-quality olive oil is pressed within a couple of hours of picking. Poorer quality olive oils may be

pressed 10 hours after the olives are picked. Ideally the oil should be pressed in under an hour but certainly within a few hours.

Also, "harvest" date, should be less than 6 months old when you use it. Unfortunately, few olive oils actually provide a harvest date. As for olive oil in restaurants, more often than not, the olive oil served for bread dipping is typically of very poor quality and is best avoided.

## **Consider New World Olive Oils**

Olmsted, who is also a food critic, suggests considering buying olive oil from countries besides Italy, many of which produce very fine, high-quality oils. His favorite is Australia, but Chile, South Africa and even California also produce high-quality oils.

*"I'm a big fan of Australia," he says. "Most of the experts I talked to say, across the board, [Australia has] the best, most reliable quality. Australia also has separate legal standards from what most of the rest of the world uses for olive oil, which are considerably stricter, the testing and the grading.*

*Another thing is to look at some other countries that people don't really associate so much with olive oil, but do a great job. I like a lot of the new world olive oils: California, Chile [and] South Africa."*

As for the best place to buy olive oil, look for stores where taste testing is allowed and encouraged, such as gourmet stores or specialty retailers. "Once you taste good olive oil, you can never go back to the bad stuff. It's pretty clear when you taste it and smell it that it's fresh, that it's fruity, that it's a whole different ball game," Olmsted says.

## **How to Use Olive Oil**

You'll find plenty of inconsistencies when you begin reading information about olive oil's supposed health benefits, as well as the risks of using it for cooking. Some advocate consuming olive oil only at room temperature, drizzling it abundantly over salads and

other foods. Others argue there is insufficient evidence that cooking with olive oil produces enough toxic byproducts to pose a health risk.

Case in point: An article published in Serious Eats<sup>12</sup> examined a few studies and then concluded there's no real danger from cooking with olive oil. The author cited one study that found olive oil to be more stable than various seed oils for frying at temperatures between 320 and 374 degrees F.

Another study found olive oil produced fewer fumes (volatile aldehydes) than canola oil. Indeed, several studies<sup>13</sup> have shown that virgin olive oil produces fewer oxidation products than polyunsaturated oils when heated, due to its antioxidants. I disagree with recommendations to cook with olive oil, and so do many experts on fats and oils.

For example, I've previously interviewed Rudi Moerck, Ph.D., on the proper use of various cooking oils. He warns olive oil should not be used in cooking, as its chemical structure and high amount of unsaturated fats make it highly susceptible to oxidative damage when heated.

When oxidative damage happens inside your body, it can trigger pain, arthritis, cancer and heart disease, and can speed up the aging process, so you'll want to minimize anything that increases your body's oxidative stress.

Moreover, even if your olive oil were to withstand the heating process without oxidizing, its nutrients are destroyed by heat, so it's not providing you with any health benefit once you've cooked with it.

If you need to cook something and have only two options available – a good olive oil and canola – it makes sense to reach for the olive. Just realize that there are much better options than either of those. Saturated fats such as butter, ghee and lard rendered from organically raised grass-fed animals are far more resistant to the heat-induced oxidation of cooking than even the best olive oil. Coconut oil is another excellent option.

## **How to Optimize Shelf Life**

Olive oil is extremely perishable even when used cold, thanks to its chlorophyll content, which accelerates decomposition. If you're like most people, you're probably leaving your bottle of olive oil right on the counter, opening and closing it multiple times a week.

It's important to remember that any time the oil is exposed to air and/or light, it oxidizes, and the chlorophyll in extra virgin olive oil accelerates the oxidation of the unsaturated fats. Clearly, consuming spoiled oil (of any kind) will likely do more harm than good. To protect your olive oil from rancidity, be sure to:

- Keep it in a cool, dark place
- Purchase smaller bottles to ensure freshness
- Immediately replace the cap after each pour

To help protect extra virgin olive oil from oxidation, Moerck suggests putting one drop of astaxanthin into the bottle. You can purchase astaxanthin, which is an extremely potent antioxidant, in soft gel capsules. Just prick it with a pin and squeeze the capsule into the oil.

The beautiful thing about using astaxanthin instead of another antioxidant such as vitamin E is that it is naturally red, whereas vitamin E is colorless, so you can tell the oil still has astaxanthin in it by its color. As the olive oil starts to pale in color, you know it's time to throw it away.

You can also use one drop of lutein in your olive oil. Lutein imparts an orange color and will also protect against oxidation. Again, once the orange color fades, your oil is no longer protected against rancidity and should be tossed. This method is yet another reason for buying smaller bottles. If you have a large bottle, you may be tempted to keep it even though it has begun to oxidize.

## **How to Identify Defective Olive Oil**

How can you tell superior olive oil from an inferior one, or whether or not your olive oil has gone bad? Here are four tell-tale signs to look out for:

1. **Rancidity** – If it smells like crayons or putty, tastes like rancid nuts and/or has a greasy mouthfeel, your oil is rancid and should not be used.
2. **Fusty flavor** – "Fusty" oil occurs when olives sit too long before they're milled, leading to fermentation in the absence of oxygen. Fusty flavors are incredibly common in olive oil, so many simply think it's normal. However, your olive oil should not have a fermented smell to it, reminiscent of sweaty socks or swampy vegetation.

To help you discern this particular flavor, look through a batch of Kalamata olives and find one that is brown and mushy, rather than purple or maroon-black and firm. The flavor of the brown, mushy one is the flavor of fusty.

3. **Moldy flavor** – If your olive oil tastes dusty or musty, it's probably because it was made from moldy olives, another occasional olive oil defect.
4. **Wine or vinegar flavor** – If your olive oil tastes like it has undertones of wine and vinegar (or even nail polish), it's probably because the olives underwent fermentation with oxygen, leading to this sharp, undesirable flavor.

Three years ago, the Dr. Oz Show featured a segment on the olive oil "fridge test," suggesting you can tell your extra virgin olive oil is pure if it solidifies in the fridge. However, tests by the U.S. Davis Olive Center prove this to be a highly unreliable way to detect olive oil purity.

In fact, the Olive Center researchers refrigerated seven samples of oil and found that none of them congealed after 60 hours in the fridge. While some had areas that had hardened, due to the varying levels of saturated fats in the oil, none solidified completely. So, save yourself the effort and avoid using this test.

## **Other Meaningless Label Terms**

Besides "use by" and "sell by" dates, which have no bearing on quality since such dates are unregulated, other terms found on olive oil labels that are completely meaningless

include "cold pressed" or "first press." They're effective marketing strategies, evoking feelings of old world dining and romance, but they're obsolete and meaningless when it comes to oil quality.

Olive Source has a page about obsolete and unregulated terms used by the olive oil industry.<sup>14</sup> A prime example is their use of the term "cold pressed." Cold pressed refers to the time when oil was made using hydraulic presses, and there was a distinction between the first (cold) press and the second (hot) press, but that process is outdated.<sup>15</sup>

Today, most extra virgin olive oil is made in centrifuges. According to Olive Source, "If anything, the term "first press" on a label should be a warning signal, rather than a sign of quality."

Terms that are actually meaningful are "early harvest" or "fall harvest" (they're interchangeable). Early harvest olives (harvested in the fall) are green because they're not fully ripe, have slightly less oil and are more bitter because they're higher in polyphenols compared to olives harvested in late winter, which are black.

Early harvest olives are more expensive because it takes more of them to make a bottle of oil, but the oil has a longer shelf life and is more nutritious due to the higher antioxidant content.

## **Tips and Guidelines for Finding the Real Deal**

For more information about olive oil – how it's made and what constitutes extra-virgin olive oil, please read through the [transcript](#), as he goes into details about pressing, grading and testing. In his book, "Fake Food, Real Food," he also explains how to make your own.

I just happen to grow olive trees on my property, so I will probably start making my own freshly pressed olive oil. Below is a summary of various tips gathered from experts about how to find the best quality olive oil. You can also find more information on Mueller's Facebook page, Truth in Olive Oil.<sup>16</sup>

**Harvest date** – Insist on a harvest date, and try to purchase oils only from the current year's harvest. Look for "early harvest" or "fall harvest."

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**Storage and tasting** – Find a seller who stores the oil in clean, temperature-controlled stainless steel containers topped with an inert gas such as nitrogen to keep oxygen at bay, and bottles it as they sell it; ask to taste it before buying.

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**Color and flavor** – According to Guy Campanile, an olive oil producer, genuine, high-quality extra virgin olive oil has an almost luminescent green color.<sup>17</sup> However, good oils come in all shades, from luminescent green to gold to pale straw, so color should not be a deal-breaker.

The oil should smell and taste fresh and fruity, with other descriptors including grassy, apple, green banana, herbaceous, bitter or spicy (spiciness is indicative of healthy antioxidants). Avoid flavors such as moldy, cooked, greasy, meaty, metallic or resembling cardboard.

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**Bottles** – If buying pre-bottled oil, favor bottles or containers that protect against light; darkened glass, stainless steel or even clear glass enclosed in cardboard are good options. Ideally, buy only what you can use up in six weeks.

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**Labeling terms** – Ensure that your oil is labeled "extra virgin," since other categories – "pure" or "light" oil, "olive oil" and "olive pomace oil" – have undergone chemical processing. Some terms commonly used on olive oil labels are meaningless, such as "first pressed" and "cold pressed."

Since most extra virgin olive oil is now made with centrifuges, it isn't "pressed" at all, and true extra virgin oil comes exclusively from the first processing of the olive paste.

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**Quality seals** – Producer organizations such as the California Olive Oil Council and the Australian Olive Association require olive oil to meet quality standards that are stricter than the minimal USDA standards.

Other seals may not offer such assurance. Of course, finding "USDA certified organic" is a bonus, but not the only consideration. Though not always a guarantee of quality, PDO (protected designation of origin) and PGI (protected geographical indication) status should inspire some confidence.

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**Storage and use** — Keep your olive oil in a cool and dark place, and replace the cap or cork immediately after each pour. Never let it sit exposed to air.

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**Prolonging freshness** — To slow oxidation, try adding one drop of astaxanthin to the bottle. Astaxanthin is red, so it will tint your olive oil. As the olive oil starts to pale, you know it's time to throw it away. Alternatively, add one drop of lutein, which is orange in color. Vitamin E oil is another option,<sup>18</sup> but since it's colorless, it will not give you a visual indicator of freshness.

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## Sources and References

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- <sup>1</sup> [Indexmundi US Olive Oil Domestic Consumption by Year](#)
- <sup>2</sup> [Fact.MR, Olive Oil Market Outlook 2022](#)
- <sup>3, 4, 10, 11, 17</sup> [CBS News January 3, 2016](#)
- <sup>5</sup> [Food Safety News April 12, 2022](#)
- <sup>6</sup> [Olive Oil Times May 9, 2022](#)
- <sup>7</sup> [UC Davis Olive Center Report March 2015](#)
- <sup>8</sup> [FoodFraud.org](#)
- <sup>9</sup> [Science Direct, Olive Pomace](#)
- <sup>12</sup> [Serious Eats March 2015](#)
- <sup>13</sup> [Science or Not September 15, 2012](#)
- <sup>14</sup> [Olive Source Obsolete and Unregulated Terms](#)
- <sup>15</sup> [Olive Source September 2010](#)
- <sup>16</sup> [Truth in Olive Oil Facebook](#)
- <sup>18</sup> [Free Radic Res December 1999](#)