



THINK GREEN



EAT GREEN

WHICH COOKING OILS ARE SUSTAINABLE?

Why do we cook with oil? Many of us are familiar with using oil when cooking or frying food. Oil can be used as an ingredient (as in salad dressings); it can change the texture of food, sometimes making it crispy; and most importantly, oil adds flavor to food and increase its richness.

This issue of the *Think Green Eat Green* newsletter will address the health effects of a variety of cooking oils, as well as how their production affects our planet's environment.

Grocery store shelves offer a wide selection of different types of cooking oils. How to choose?

Let's look the different types of fats.

Saturated fats include fats from animals (e.g., butter, lard, bacon fat) as well as plants such as coconut and palm oils. With the possible exception of coconut oil, they are considered unhealthy and should be used sparingly.

Monounsaturated fats include olive, avocado, canola and nut oils. These oil, especially olive, are believed to help lower cholesterol



levels. **Polyunsaturated fats** include omega-3 and omega-6, found in oily fish, walnuts, and chia and flax seeds. **Trans fats** are made from oil that is hydrogenated, turning it into solid shortening or stick margarine. Trans fats are known to increase the risk of heart disease.

How is plant oil made?

Cooking oils are extracted or expressed from the seeds or nuts of plants (peanut, soybean, almond, flax, pumpkin and walnut); or squeezed from the pulp or flesh of fruit (such as coconut, avocado, palm and olive). Solvent extraction methods involve the use of chemicals to separate the oil from its source. Cold-pressed expeller methods are just that - no heat is used during the process, which might degrade the quality of the oil.

It's important to note that many oils change their characteristics while cooking, especially unrefined oils. Certain oils have a low "smoke point." This not only means that toxic smoke is emitted when oil is heated to a high temperature, but also that oil reacts with oxygen and releases free radicals – a dangerous situation. The more highly refined the oil, the higher its smoke point. This [article](#) from *The Spruce Eats* provides the cooking temperatures that define smoking points for different oils.

Let's take a look at some oils.

Olive oil is the darling of all cooking oils. It contains many nutrients as well as anti-inflammatory properties and antioxidants. We've known for decades the benefits of the Mediterranean diet, full of olive oil, and the low incidence of heart disease in countries where this diet is prevalent. Extra virgin, cold-pressed olive oil is often a good choice for cooking; however, it is not suitable for high-heat cooking or frying, due to its low smoke point.



Canola oil was developed in Canada; its name in fact means Canadian Oil, Low Acid. Rapeseed plants, which produce industrial oil, were cultivated through conventional plant breeding methods to produce a low-acid, neutral tasting oil. In 1995, genetically engineered canola oil was introduced, and 95% of what is now produced in Canada is genetically modified (GMO). This is a highly refined (read high smoke point) oil. Cold-pressed, organic canola oil, excellent for high-heat cooking, can also be found.

Avocado oil is an unrefined oil with a relatively neutral flavor and a high smoke point. Like olive oil, when cold-pressed, avocado oil contains many nutrients and

much monounsaturated **oleic acid** - promoted by the medical community as having “heart health” benefits.



Is **coconut oil** a “Super Food?” Coconut oil is a saturated fat, but with a unique combination of fatty acids. These fatty acids are converted to energy much more quickly than other fats. Studies show that coconut oil can contribute to heart health by increasing levels of high-density lipoproteins (HDL), the “good”

cholesterol. It is relatively easy to find cold-pressed, organic, unrefined coconut oil.



Let's not forget **animal fats** such as lard and butter (especially clarified butter or ghee) are stable at high temperatures. They impart much flavor to food and should be used sparingly as they are saturated fats, the unhealthiest type.

Trans fats. In 2015, the US Food and Drug Administration (FDA) announced that trans fats were considered unfit for human consumption and announced a planned phase-out of their use from the American food industry. Trans fat use in fast food restaurants has greatly decreased, though not yet eliminated, and continues to be used in many pre-packaged snack foods. Here is an [info sheet](#) from the FDA on the trans fat removal process.

[Advice: Ask for nutritional information, read labels!]

We've covered the consequences of various cooking oils on human health. Let's now look at how their cultivation/harvesting/production affects the environment.

Cold-pressing of organically-raised plants to express oil results in the least impact to our planet's environment.

If we use nut oils, we need to keep in mind the water requirements of growing those trees, particularly almonds and walnuts in California. The monocrop method of agriculture used to grow, for example, canola is known to destroy the soil, leading to increased use of synthetic fertilizers and pesticides.

Solvent extraction of oils involves grinding the seed, then washing with a petroleum distillate (usually hexane) to release oil from the seed. The resultant mixture is heated to high temperatures to remove and recover the solvent, which is used again and again. Cooking oil remains. There are several environmental impacts associated with this process: Initially, hexane is refined from crude oil, with its

resultant carbon emissions; there is energy consumption due to the high-heating process, again with carbon emissions; and hexane is highly flammable (and a potentially toxic inhalant), so there are workplace safety issues. The Environmental Protection Agency (EPA) has monitored the solvent extraction industry for “Air Toxics Standards” levels since 2000. The process produces a highly refined oil with a high smoke point, such as canola, safflower, or soybean oil.

Palm Oil

Palm oil really deserves its own section, as the environmental factors are many and devastating. Palm oil comes from the fruit of oil palm trees and is a very productive crop. The trees are fast-growing and offer a far greater yield at a lower cost of production than any other vegetable oil.



But at what price, socially and environmentally? In recent decades, the crop has taken over huge tracts of land in Indonesia (now the world’s largest producer of palm oil), at the expense of carbon-sequestering tropical forests. Results are displacement of human populations, as well as loss of animal habitat and biodiversity on an enormous scale – contributing to the critical endangerment of the three remaining species of orangutans in the world.

Social issues reported are child labor, food insecurity for those who live off their own land, and violation of Indigenous Peoples’ land rights. Though palm oil production leads to more employment, with higher income potential, its detrimental effects on the environment can’t be ignored.

Palm oil is a saturated fat, semi-solid at room temperature, with a complex, multi-step refinement process, and a high smoke point.

Who consumes palm oil? We all do! It is estimated that 50% of all items on grocery store shelves contain palm oil. It is in nearly all processed foods, household cleaning products, shampoos and beauty products. Many consider it to be the replacement for trans fats after FDA regulations required trans fat labeling in 2006.

Palm oil accounts for over one-third of global oils produced.

So, “**which oil to use when?**” Here’s a good [summary](#) from the Eat This, Not That! folks. A rule of thumb would be to use a good-quality olive oil for sautéing; and for high-temperature cooking, an oil with a higher



smoke point such as avocado or organic canola oil. As always, it’s best to look for these terms

certified organic/cold-pressed/unrefined/extra virgin

as you

[read those labels!]

SOME GREEN THOUGHTS



"Palm oil raises so many issues that it's hard to know where to begin."

- *Marion Nestle, molecular biologist, public health nutritionist, author*

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Try organic food ... or as our grandparents called it, "food."

- *Michael Pollan, author, journalist, professor*

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"How many other ways are there to fry an eggplant?"

- *Yotam Ottolenghi, chef, restaurateur, food writer*