

## Olive oil more stable and healthful than seed oils for frying food

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Frying is one of the world's most popular ways to prepare food—think fried chicken and french fries. Even candy bars and whole turkeys have joined the list. But before dunking your favorite food in a vat of just any old oil, consider using olive. Scientists report in ACS' *Journal of Agricultural and Food Chemistry* that olive oil withstands the heat of the fryer or pan better than several seed oils to yield more healthful food.

Mohamed Bouaziz and colleagues note that different oils have a range of physical, chemical and nutritional properties that can degrade oil quality when heated. Some of these changes can lead to the formation of new compounds that are potentially toxic. By-products of heating oil can also



lower the nutritional value of the food being fried. Bouaziz's team wanted to find out which cooking oil can maintain its quality under high heat and repeated use.

The researchers deep- and pan-fried raw potato pieces in four different refined oils—olive, corn, soybean and sunflower—and reused the oil 10 times. They found that <u>olive oil</u> was the most stable oil for deep-frying at 320 and 374 degrees Fahrenheit, while sunflower oil degraded the fastest when pan-fried at 356 degrees. They conclude that for frying foods, olive oil maintains quality and nutrition better than seed oils.

**More information:** "Monitoring of Quality and Stability Characteristics and Fatty Acid Compositions of Refined Olive and Seed Oils during Repeated Pan- and Deep-Frying Using GC, FT-NIRS, and Chemometrics" *J. Agric. Food Chem.*, 2014, 62 (42), pp 10357–10367. DOI: 10.1021/jf503146f

## Abstract

Refined olive, corn, soybean, and sunflower oils were used as cooking oils for deep-frying at two different temperatures, 160 and 190 °C, and for pan-frying of potatoes at 180 °C for 10 successive sessions under the usual domestic practice. Several chemical parameters were assayed during frying operations to evaluate the status of the frying oils. Refined olive oil, as frying oil, was found to be more stable than the refined seed oils. In fact, this oil has proven the greatest resistance to oxidative deterioration, and its trans-fatty acid contents and percentages of total polar compounds were found to be lower at 160 °C during deep-frying. Finally, chemometric analysis has demonstrated that the lowest deterioration of the quality of all refined oils occurred in the refined olive oil during deep-frying at 160 °C and the highest deterioration occurred in the refined sunflower oil during pan-frying at 180 °C.



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