

Cooking Oils

Fats with a high percentage of monounsaturated and polyunsaturated fatty acids are usually liquid at room temperature and are referred to as “oils.” Different oils have different chemical properties as well as different flavor and nutrition profiles.

When cooking with oils, the main considerations are:

- Smoke point
- Flavor
- Appearance
- Nutrition

Smoke Point

The **smoke point** is the temperature at which a heated fat or oil starts to break down and produces smoke, giving an unpleasant smell and taste to food. At that point, the fat is decomposing and can emit potentially toxic compounds. Be sure you choose the fat that has a smoke point above the temperature you will be cooking.

Typically, the more refined the oil, the higher the smoke point. Therefore, you do not want to use oils that are less refined, such as extra virgin and virgin olive oil, for frying. Some more refined types of olive oil are suitable for frying and will state so on the package.

Each time you use the oil, the smoke point decreases. Therefore, it is best to change the oil each time you fry foods.

Oils with Higher Smoke Points

- Canola Oil
- Corn Oil
- Olive Oil (not extra virgin or virgin)
- Peanut Oil
- Soybean Oil
- Sunflower Oil



Flavor

Vegetable oils with intense flavor, such as extra virgin olive oil and sesame oil, should be used in small amounts as flavorings rather than frying. They make good dips, salad dressings, and are best in small amounts drizzled over the food.

Appearance

Cooking in a fat that is solid at room temperature produces a hazy, translucent appearance at a cool room temperature. Foods cooked in oil have a glossy and transparent appearance. Icings and glazes stick to foods more easily if the foods are fried in a solid fat rather than oils.

Browning that appears when foods are cooked is the result a Maillard reaction that occurs when the sugars and proteins present in the food react in the presence of heat. The degree of browning depends on the time and temperature of frying in combination with the chemical composition of the food being cooked rather than the type of fat used.

Nutrition

Oils provide essential fatty acids and vitamin E in the diet. Substituting polyunsaturated and monounsaturated fatty acids for some saturated fatty acids lowers both total and low-density lipoprotein (LDL) blood cholesterol levels. Both omega-6 and omega-3 fatty acids found in oils are important for health, but a greater proportion of the omega-3 fatty acids is desirable for reducing the risk for heart disease. Flaxseed oil, canola oil, and soybean oil are examples of oils with omega-3 fatty acids.

Until recent years, olive oil was believed to be beneficial due to its high concentration of monounsaturated fatty acids. However, virgin

olive oil also contains phenolic compounds that other seed oils such as sunflower, soybean, and rapeseed (canola) lack. Several studies have demonstrated that olive oil phenolics have positive effects on certain risk factors for chronic disease, particularly atherosclerosis, cardiovascular disease, and certain types of cancer.

Olive oils with the greatest amount of phenolic compounds are the extra virgin and virgin olive oils. Extra virgin olive oils are made from the first cold press or extraction of the olive, while virgin olive oils are made from the second. The first cold press or extraction has been shown to have the greatest amount of phenolic compounds.

Cooking is one of the factors that affects phenolic acid content of olive oil. Many olive oil phenolics degrade when heat is applied during cooking. High temperatures can result in changes in the composition of the phenolics in virgin olive oil, or even partial to complete loss. For the greatest amount of phenolic compounds, less refined olive oil should not be heated to high temperatures.



Olive Oil Taste Testing

Color

Color is not indicative of quality or flavor. Generally dark green highlights are characteristic of fruity oils, corresponding to olives that have not reached ripeness. A hint of yellow or gold corresponds to sweeter olives, picked later in the harvest.



Flavor

Olive oil tasters describe the positive attributes using the following terms:

Fruity: Having pleasant spicy fruit flavors characteristic of fresh ripe or green olives.

Bitter: Creating a mostly pleasant acrid flavor sensation on the tongue.

Pungent: Creating a peppery sensation in the mouth and throat.

Ripe fruit yields oils that are milder, aromatic, buttery, and floral. Green fruit yields oils that are grassy, herbaceous, bitter, and pungent. Fruitiness also varies by the variety of olive.

Directions: Examine and taste three samples of olive oil. Describe the taste and color in the table below. In the United States, olive oil graded as extra virgin olive oil has an excellent flavor and odor, and virgin olive oil has reasonably good flavor and odor. Can you pick out the extra virgin olive oil?

Oil	Taste	Color
#1		
#2		
#3		

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