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Olives: Safe Methods for Home Pickling

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WHAT ARE OLIVES?

The olive tree, *Olea europaea*, valued for both its beauty and its fruit, has been a part of Mediterranean civilization since before recorded history. The olive was cultivated and its oil traded as early as 3000 B.C.E. Olives and olive oil have been used for food, cooking, medicine, salve, soap, and lamp fuel.

Today, most of the world's olives are still grown in the Mediterranean region. The olive tree is best suited to areas with a Mediterranean climate—a long, hot growing season and a relatively cool winter. Most commercial olive acreage in the United States is in California, with growth concentrated in the interior valleys of Central California.

Five commercially important olive varieties are grown in California: Manzanillo, the most common variety; Mission, which was originally cultivated by Franciscan monks; and Sevillano, Ascolano, and Barouni, which have very large fruit. Over 80 percent of California's olives are used in the production of canned black ripe style or California black ripe style olives; the remaining crop is crushed for olive oil or processed into specialty styles of olives. Many other popular table and oil olive varieties, including Kalamata, Hojiblanca, and Picholine, are grown on a smaller scale in orchards and home gardens throughout California.

NUTRITION

Olives and olive oil are good sources of monounsaturated fat. Olive oil has the highest percentage (over 70%) of monounsaturated fat of any edible oil. Olives and olive oil also contain other minor components such as pigments, flavonoids, and phenolic compounds that act as antioxidants and may offer protective health benefits.

SELECTING FRESH OLIVES

Select only freshly harvested, unbruised olives for processing at home. Olives are harvested at different stages of ripeness (*fig. 1*)—*green-ripe*, *turning color*, and *naturally black ripe*. The first mature *green-ripe* olives are ready to be picked in California starting in mid-September, when the fruit have reached their full size. Mature *green-ripe* olives will release a characteristic creamy white juice when you squeeze them. Most *green-ripe* olives are harvested when they are *even colored*, from yellow-green to a straw color. As the olives ripen further, their color turns from yellow-green to rose to red-brown. These *turning color* olives are still firm and their flesh lacks dark pigment or is partially pigmented close to the skin. *Naturally black ripe* olives are allowed to ripen fully on the tree. They reach the desired dark red to purple or black stage of color about 3 to 4 months after the *green-ripe* stage.



Note: Research on food preservation is ongoing—recommendations may change. Make sure your food preservation information is always current. Always follow up-to-date, tested guidelines and recipes from reliable sources. 06/2007



Figure 1. Freshly harvested olives at different stages of ripeness: green-ripe (1 and 2); yellow-green to straw (3); rose to red-brown (4 and 5); and red-brown (6) (may be too soft for some types of olive curing). Not shown are naturally black ripe olives (also described as dark red to purplish black).

Naturally black ripe olives are harvested in California starting in mid-November and continuing through December, depending on the variety, crop yield, and region, and on weather conditions. When mature, these olives will release a reddish black liquid when you squeeze them and their flesh will be nearly completely pigmented. Ripe olives bruise easily and must be handled with care.

The oil content of olives increases during ripening. Naturally black ripe olives are primarily used for oil extraction. Black olives with pigment through to the stone are considered overripe and will be softer when processed, but are the preferred fruit for some types of dried olives. Olives with varying maturity will usually need to be sorted according to ripeness before you begin any of the processing methods described in this publication.

Some olive varieties are preferred for specific olive styles, based on their flavor, texture, size, and processing characteristics. For example, the Manzanillo variety is ideal for lye-cured olives and Spanish-style green olives, the Mission variety is excellent for dry salt cured ripe olives and dark ripe style or California black ripe style olives, the Kalamata variety is ideal for Kalamata-style water-cured olives, and the Sevillano variety is often used for Sicilian-style fermented olives.

STORING FRESH OLIVES

Fresh olives, especially naturally black ripe olives, should be processed within a few days after harvest if possible. Green-ripe olives generally store better than naturally black ripe olives. For best quality, store olives at temperatures between 41° and 50°F, preferably in shallow, ventilated crates. Storage of fresh olives at colder temperatures (from 32° to 36°F) for 2 weeks or more can cause chill injury that will lead to internal browning and skin browning. Chill injury shouldn't be a problem if the olives are exposed to these colder temperatures for only short periods of time. Sevillano olives are most susceptible to chill injury, followed by Ascolano, Manzanillo, and Mission (least susceptible). Prolonged (6 weeks or more) storage of fresh olives at 50°F can cause surface pitting and spotting.

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METHODS FOR CURING OLIVES

Olives picked off the tree contain a very bitter compound called *oleuropein*. Harvested olives must be “cured” to remove the bitterness in order to make them palatable. The most common curing processes use brine, dry salt, water, or lye treatments. During these curing processes the water-soluble oleuropein compound is leached out of the olive flesh.

The flavor and texture of each style of olive depends partly on the curing process used. Lye-curing is the most rapid and efficient process for de-bittering, but many people think that lye-cured olives are less flavorful than other styles of olives. Brined olives undergo a natural fermentation not unlike that used for traditional dill pickles and sauerkraut. Acids produced in the fermentation process by lactic acid bacteria that are naturally present on the fruit give these olives a distinctive flavor and aroma. Brined olives tend to be saltier than lye-cured olives. Water curing does not change the flavor of the olives as much as other curing methods. This publication includes directions for making water-cured, brine-cured, dry salt cured, and lye-cured olives.

The storage life of the olives that you prepare at home varies depending on the olive style, and is indicated in the instructions. For a longer storage life you can preserve some olives using additional methods (e.g., freezing, drying, pressure canning)—see [table 1](#) for suitable preservation methods for the olive styles included in this publication.

WATER-CURED OLIVES

To prepare olives for water curing, you must first individually cut or crack each olive so that the bitter oleuropein can more easily leach out. The prepared olives are soaked in water and the water is changed daily over a week or more, depending on the olive style and the desired level of bitterness. After curing, the olives are placed in a *finish brine*, which is a vinegar-salt solution that adds the characteristic flavors. The advantage of this method is that the olives are ready to eat within a few weeks. These olives will still be slightly bitter because water curing removes less oleuropein than other methods.

CAUTION: If at any time the olives become moldy or soft or bad smelling, do not eat them or taste them. (See precautions under “Disposal of Spoiled and Questionable Olives.”)

Table 1. Suitable preservation methods for home-prepared olives

Olive style	Suitable preservation methods				
	Brine	Refrigeration	Freezing*	Drying	Pressure canning
Water-cured					
Kalamata-style olives	✓	✓			
Mediterranean-style cracked olives	✓	✓			
Brine-cured					
Greek-style black olives in brine	✓	✓			
Sicilian-style green olives in brine	✓	✓			
Dry salt cured					
		✓	✓		
Lye-cured					
Green olives	✓	✓	✓	✓	✓
Dark ripe style olives	✓	✓	✓	✓	✓
Lye-cured fermented					
Spanish-style green olives	✓	✓			✓

* Freezing is most suitable for smaller olive varieties with higher oil content (e.g., Mission, Kalamata, and Picholine); larger varieties (e.g., Sevillano, Ascolano, and Barouni) will soften during freezing.

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Seasoned olives recipe

1/2 c. Olive oil

1/2 tsp crushed fennel seeds

1 Tblsp minced fresh rosemary

2 tsp lemon zest

Juice of 1/2 lemon

2 cloves sliced garlic

1/4 tsp. Pepper flakes

1 1/2 cups cured olives, desalted

Mix all seasonings, add olives, then marinate for 24 hours in refrigerator. Bring to room temperature before serving. Serve with sliced baguette, or cheese tray.