MAKING OLIVE OIL

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Harvest Timing

Nothing gets more discussion among olive growers than when to pick. It can make all the difference as far as yield, organoleptic characteristics, shelf life, and color.
Fruit maturation depends among other things on olive variety, temperature, sunlight, and irrigation. A hot fall can cause fruit to ripen quickly, resulting in a narrow window for optimum picking. A cool fall may result in green fruit hanging on the tree well into winter. Some farmers are forced to pick greener fruit than they want to hedge against frost damage or a big storm. Some varietals will ripen faster than others, and olives may mature later in some parts of the orchard than in others.
This makes the decision on when to pick potentially complicated. Keep in mind that olives are not as sensitive as grapes picked for wine, however. You don't have to get up in the middle of the night to meet an extremely narrow harvest window and put them on ice. Having said that, good planning is still essential to make sure the picking crew and equipment is ready when needed, and milling capacity is scheduled so that the olives don't have to wait after being harvested.

CLEANING THE OLIVES

The first step in the oil extraction process is *cleaning* the olives and removing the stems, leaves, twigs, and other debris left with the olives. The olives should be *washed* with water to remove pesticides, dirt, etc. Rocks and sand will damage a hammermill and quickly wear out a centrifugal decanter or oil separator, reducing life span from 25 to as little as 5 years. It is amazing, and sometimes entertaining, to see what can be found in the bins with the olives. We have heard millers talk not only about rocks and branches, but broken glass, rings, bracelets, pieces of metal, knives, and even razor blades. Light contaminants are removed by a heavy air flow (blower) and heavy objects sink in the water bath.

GRINDING THE OLIVES INTO A PASTE

The second step is *crushing* the olives into a paste. The purpose of crushing is to tear the flesh cells to facilitate the release of the oil from the vacuoles. This step can be done with stone mills, metal tooth grinders, or various kinds of hammermills.

MALAXING THE PASTE

Malaxing (mixing) the paste for 20 to 45 minutes allows small oil droplets to combine into bigger ones. It is an indispensable step. The paste can be heated or water added during this process to increase the yield, although this generally results in lowering the quality of the oil. The most common mixer is a horizontal trough with spiral mixing blades. Longer mixing times increase oil yield but allows a longer oxidation period that decreases shelf life.

SEPARATING THE OIL FROM THE VEGETABLE WATER AND SOLIDS

The next step consists in *separating the oil from the rest of the olive components*. This used to be done with presses (hence the now somewhat obsolete terms first press and cold press), but is now done by centrifugation, except in old facilities. Some centrifuges are called three-phase because they separate the oil, the water, and the solids separately. The two-phase centrifuges separate the oil from a wet paste. In most cases, the oil coming out of the first centrifuge is further processed to eliminate any remaining water and solids by a second centrifuge that rotates faster. The oil is then left in tanks or barrels where a final separation, if needed, happens through gravity. Finally the oil can be filtered, if desired.