

Table Olives

Information compiled by California Foundation for Agriculture in the Classroom

How Produced – Planted in hedgerows, it takes three to five years for an olive tree to produce the first fruit, with production continuing beyond 100 years. Most olive varieties are self-pollinating, meaning a single tree can pollinate itself. Other varieties require cross-pollination, relying on bees or wind. In the spring, trees are in blossom, with small cream-colored flowers appearing throughout the orchard. Once pollinated, olives grow in place of the blossom and ripen throughout the summer. During the spring and summer, supplemental water and nutrients are needed to produce optimal fruit and maximize the next year's crop production. During the fall, harvest begins while the olives are still green but starting to darken.

The harvest can vary from under 50,000 tons one year to more than 100,000 tons the next year, depending on the alternate bearing year. Alternate bearing crops have one year with high production followed by a year that produces little to no fruit. Ripe olives are handpicked and sent to one of California's two olive processing plants. There, the olives are sorted, graded, and stored until they are ready to be processed into a variety of olive products.

History – The first documented history of olives dates back to 5000 B.C. in the Mediterranean Basin, originating in ancient Greece. The cultivation and various use of olives and olive byproducts were an essential part of civilized life. Cultivating olives became a source of economic sustenance for centuries, generating widespread production. Trees were brought to the Americas by Spaniard missionaries in the 1600s and planted at the Mission Basilica San Diego de Alcalá. It took until the 1800s for commercial cultivation to begin.

In the early 1800s, there was an increase in demand for California olives to be used for oil production. Farmers began planting more trees to meet the demands of consumers, resulting in lower prices for olives from the influx into the market. Farmers then needed to create another source of revenue for their crops due to the influx. Freda Ehmann (1839-1932), an olive grower in Northern California, started to work with a U.C. Berkeley professor to examine processing methods that would extend the shelf life of olives and create a new revenue outlet. Freda experimented with 280 gallons of olives in barrels on her back porch. Thanks to her

perseverance, her black olive experiment was a success, initiating the development of the California ripe olive industry.

Varieties – There are close to 2,000 varieties of olives grown throughout the world, with varietal names describing their location of origin. California table olives are one of two varieties: Manzanillo or Sevillano. These two varieties produce different sizes of olives, giving consumers a choice ranging from small to colossal. The four oldest varieties of olives in the state are Mission, Manzanillo, Sevillano, and Ascolano. These older varieties were used for curing for many years due to their large size.



Commodity Value – California has roughly 15,000 acres devoted to olive production accounting for 95% of all olive production in the United States. Olive producers in the United States grow an average of 66,000 tons over a four year period

on 15,000 acres. The wholesale value of the United States olive production is \$72.9 million. Worldwide, the United States ranks thirteenth in olive production. Canada and Japan are the top importers for processed and fresh olives in the world.

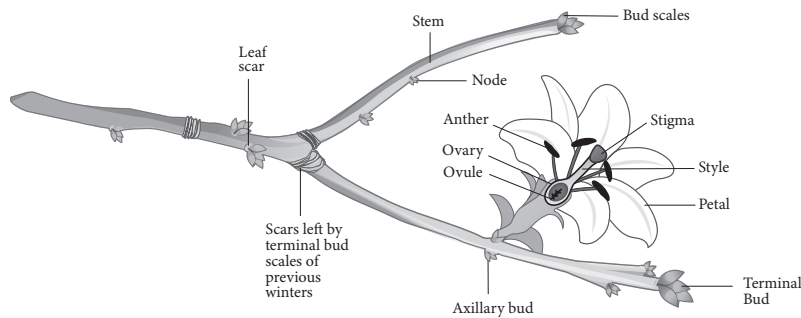
Top Producing Counties – There are five major counties in which olives are grown in California. Historically, the San Joaquin Valley has been the largest producer of olives because of the ideal Mediterranean climate. Sixty percent of all California olives are grown in Tulare, Fresno, Madera, and Imperial counties. Forty percent of the total production is grown in Sacramento, Glenn, Tehama, Shasta, and Butte counties.

Nutritional Value – Table olives are rich in vitamins E and A. Vitamin E is a nutrient that is important to vision, reproduction, and the health of your blood, brain, and skin. Vitamin A is needed for new cell growth, healthy skin, hair, tissues, and vision. Table olives are also a good source of fiber, which promotes digestive tract health.

For additional information:
California Olive Committee
(559) 456-9096
Website: www.calolive.org



Table Olive Activity Sheet



Pollination occurs in the tree's blossom. Pollen from the anthers (the male part of the plant) is transferred to the stigma (the female part of the plant). Complete pollination fertilizes the ovule and an olive fruit grows.

Lesson Ideas

- Investigate preservation methods used for processed olives.
- Taste test a variety of olives including raw, salted, brined, or flavored.
- Use a map of California to locate the geographical areas where olives are grown. Study the climate, seasons, and weather patterns of these areas and identify similarities.
- Determine how chemistry is involved in processing table olives.
- Make a list of different uses for olives and olive by-products.
- Grow your own olive tree from a cutting. Find step-by-step instructions online, and see if you can propagate an olive tree.

Fantastic Facts

1. Olive trees are evergreen—they do not lose their leaves in the fall.
2. Processing olives below 86 degrees Fahrenheit keeps their aroma and oxidation levels intact.
3. An olive branch traditionally is given to others as a symbol of peace.
4. Olives are classified as stone fruit like peaches, cherries, and plums.
5. Olives are alternate fruit bearing, which means one year a tree will produce much more fruit than the previous year or the next year.
6. The 2004 Athens Olympic torch was designed in the shape of an olive leaf, with the intended message of peace amongst the five continents.

Lesson Plan: History Behind Olives

Introduction: Today olives are grown worldwide and the fruit is incorporated into thousands of products. Historically, the production of olives has contributed to many significant uses such as fueling the torch for the 2004 Olympic Games in Athens, Greece.

Objective: Students will research an olive-related topic, write an informative text, and create a visual display.

California Standards: W.3-12.2,5,7; SL.3-12.4,5

Materials: Access for student use of the Internet and library, display boards or butcher paper, markers and other supplies of your choosing.

Procedure:

1. Divide students into teams of two or three. Have each group select from one of the following topics: the olive tree, table olive production in California, Freda Ehmann and her experiment, the

many uses of table olives, the table olive's journey from field to home, other topics of your choosing.

2. Have students explore literature and websites to learn about their olive topic and record their information. Websites may include www.calolive.org, www.olivecenter.ucdavis.edu and www.agmrc.org.
3. Students will create an informative research report on their topic. Supporting references should be cited and the document should be revised and proofed for accuracy and grammar.
4. Have the students take the information they learned and create a visual display that educates their classmates.
5. Share the displays with the school or public.