

Commodity Fact Sheet

Avocados

Information compiled by the California Avocado Commission

How Produced – California's coastal microclimates are ideal for growing avocados. California Avocados are grown by more than 3,500 farmers on approximately 54,000 acres. A single California Avocado tree can produce 200-300 avocados a year. However, the average tree usually produces approximately 150 avocados. The fruit is harvested from each tree by hand using avocado clippers. On tall trees, ladders up to 30 feet high and poles up to 14 feet long are used to reach the fruit.

The fruit is then carefully placed into large picking bins, which hold 900 pounds of fruit, and transferred to a main road where large "boom" trucks pick up the fruit and haul it to a local packing house. Upon arrival, the avocados are immediately put into a large cold storage room for 24 hours to remove field heat and preserve quality. The fruit is then placed onto conveyor belts for grading and sorting. The avocados are brushed, inspected for quality, and placed into single-layered cartons called flats or double-layered cartons called lugs. Lugs have a consistent weight of 25 pounds. Avocado size classifications are based on how many can fit into one lug. The fruit is shipped in refrigerated trucks to markets across the nation, with the majority of the crop going to California and other western states. A small amount of the crop is exported. Most California Avocados are sold fresh.

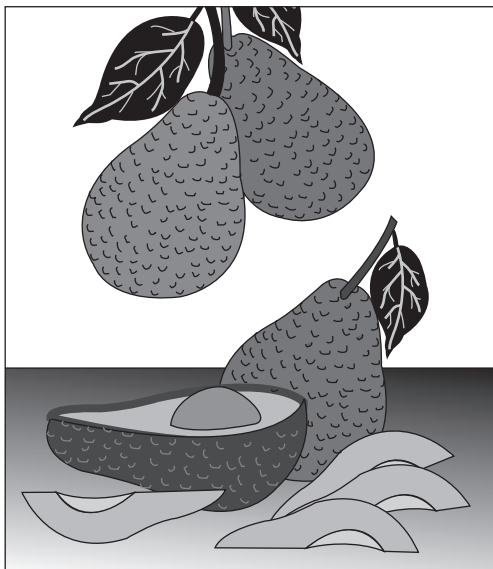
Varieties – Hass avocados account for nearly 95% of California's avocado crop volume. They have thick pebbly skin that generally turns purplish-black during ripening. They are available in peak volume from March through September. Lamb Hass and GEM are Hass-like varieties that are generally available May through October. Other commercially produced varieties include Fuerte, Zutano, Bacon, Pinkerton, Reed and Gwen. These "greenskin" varieties yield to gentle pressure when ripe and are available at different times throughout the year.

Commodity Value – California production averages 300 million pounds each year. Crop value has averaged over \$350 million with some years topping \$400 million.

Top-Producing Counties – Avocados mostly grow on the coastal strip between Monterey Bay and California's southern-most border. These areas are ideal due to the rich soils and mild climates. Approximately 30% of California Avocados are

produced in San Diego County and 37% in Ventura County.

History – The avocado is a Native American plant with a long, distinguished history. Today, the most popular variety is the Hass. The mother tree of all Hass avocados was born in a backyard in La Habra Heights, California.



The avocado (*Persea americana*) originated in south-central Mexico, sometime between 7000 and 5000 B.C. But it was several millennia before this wild variety was cultivated. Archaeologists in Peru have found domesticated avocado seeds buried with Incan mummies dating back to 750 B.C. and there is evidence that avocados were cultivated in Mexico as early as 500 B.C. Spanish conquistadors loved the fruit but couldn't pronounce it and changed the Aztec word to a more manageable aguacate, which eventually became avocado in English. The first

English-language mention of avocado was by Sir Henry Sloane in 1696.

In 1871, Judge R.B. Ord of Santa Barbara introduced avocados to the U.S. with trees from Mexico. By the early 1900s, growers were seeing the avocado's commercial potential and ever since have been hunting for improved varieties. By the 1950s around 25 different varieties of avocados were being commercially packed and shipped in California, with Fuerte accounting for more than two-thirds of the production. Even though Hass was discovered in the 1920s and patented by Rudolph Hass in 1935, it was not until large-scale industry expansion occurred in the late 1970s that Hass replaced Fuerte as the leading California variety.

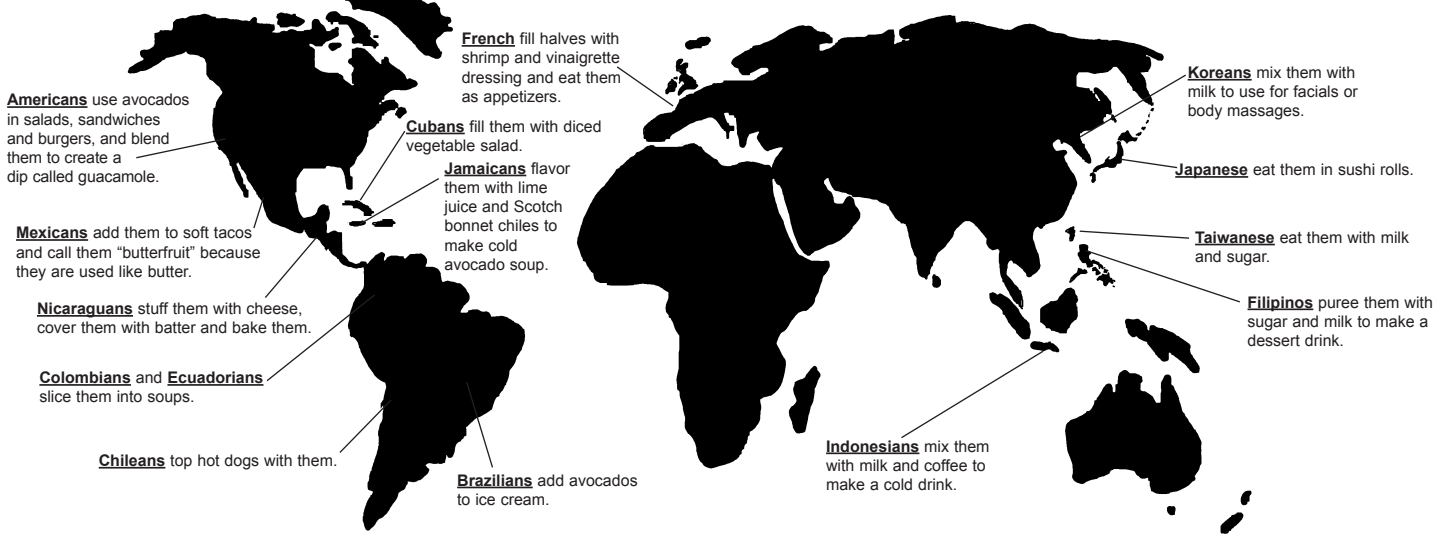
Nutritional Value – California Avocados are a heart-healthy superfood that provide "good" fats to one's diet. Naturally sodium-, cholesterol- and sugar-free, one-third of a medium avocado (50 g) has 80 calories and contributes nearly 20 vitamins and minerals, making it a nutrient-dense choice. Avocados also are a good source of fiber and folate.

For additional information:
California Avocado Commission
(949) 341-1955
Website: CaliforniaAvocado.com



Avocado Activity Sheet

Around the World with Avocados



Lesson Ideas

- Use craft materials to create individual packaging for safe avocado transport. Test your invention by transporting your avocado (via backpack) for several days. Compare your results with others.
- Research which beauty products contain avocados and develop an infomercial to promote an avocado-based product.
- On a California county map, shade in the top-producing counties which produce avocados.
- Make a picture book illustrating the harvesting of avocados.
- Cut open an avocado seed. Identify the embryo, cotyledons and seed coat. Draw a cross-sectional view.
- Record and graph the weekly/monthly prices of avocados.
- Sprout an avocado plant from a seed.
- Cut an avocado in half and remove the fruit and seed. Weigh the skin, meat and seed in grams. What percent of the avocado is edible?
- If a lug of size 48 avocados weighs 25 pounds, how much does one average avocado of this size weigh?

Fantastic Facts

1. Avocados are a fruit.
2. The Hass variety accounts for 95% of California's crop.
3. San Diego and Ventura county are the top producing counties.
4. Fuerte, Zutano, Bacon, Pinkerton, Reed and Gwen varieties all have green skin.
5. Avocados are harvested by hand using special shears called clippers.
6. Avocados are a heart-healthy superfood.
7. Avocados are naturally sodium-, cholesterol- and sugar-free.
8. The Hass avocado is named after Rudolf Hass, a postal worker who discovered it in La Habra Heights, California.

Lesson Plan: Ripening an Avocado

Introduction: Avocados are increasingly shipped ripe and ready-to-eat to retailers and foodservice operators. Some are shipped "firm" and arrive at the point-of-purchase unripened. Ethylene is a natural hormone emitted from fruit such as avocados, bananas, kiwifruit, and apples that causes the unripe fruit to ripen.

Objective: Students will investigate different methods to speed the ripening process of avocados.

California Standards: NGSS: 3-5-ETS1-1, 3-5-ETS1-2, MS-ETS1-1, MS-ETS1-2, MS-PS1-2; CC ELA: SL. 3-12.4

Materials: At least two avocados per group, bananas, apples, kiwifruit, paper bags, plastic bags, and other supplies determined by the students, knife.

Procedure:

1. Explain to the students why many fruits, including avocados, are shipped unripe.
2. Divide the students into groups and have them design an experiment that would expedite the ripening process of avocados. Show them supplies such as bananas, kiwifruit, apples, paper bags, plastic bags, and other items available.
3. Have each group obtain your approval of their experimental design, conduct the experiment and complete a formal laboratory report.
4. At the completion of all of the experiments, have the students share their results with the class. This can be done while the class eats an avocado snack.
5. Discuss the various methods that are used to commercially ripen fruit such as avocados.