

Avocados

Information compiled by the California Avocado Commission

How Produced – California’s coastal microclimates are ideal for growing avocados. California avocados are grown by nearly 6,000 farmers on approximately 65,000 acres. As many as 500 avocados are harvested from each tree by hand using special avocado shears called “clippers.” On tall trees, ladders up to 30 feet high and poles up to 14 feet long are used to reach the fruit.

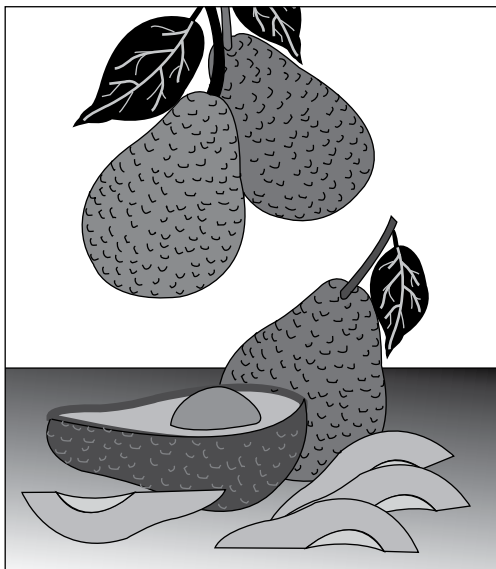
The fruit is then carefully placed into large picking bins, which hold 900 pounds of fruit, and transferred to a main road where large “boom” trucks pick up the fruit and haul it to a local packing house. Upon arrival, the avocados are immediately put into a large cold storage room for 24 hours to remove field heat and preserve quality. The fruit is then placed onto conveyor belts for grading and sorting. The avocados are washed, 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. Avocados are sized based on how many can fit in one lug. The fruit is shipped in refrigerated trucks to markets nationwide.

Varieties – Hass avocados account for nearly 95 percent of California’s avocado crop volume. They have thick pebbly skin that generally turns purplish-black during ripening and are usually available year-round. Fuerte, Zutano, Bacon, Pinkerton, Reed and Gwen varieties have green skins that do not change color as they ripen. These “greenskin” varieties yield to gentle pressure when ripe and are available at different times throughout the year. A relative newcomer, the Lamb Hass, is a Hass-like variety that is generally available July through October.

Commodity Value – California produces nearly 90 percent of the nation’s crop, growing approximately 300 million pounds each year valued at about \$300 million. The majority of the crop is sold in the United States. Most California avocados are sold fresh, while some are used in processed avocado products such as guacamole.

Top-Producing Counties – Avocados mostly grow on the coastal strip between San Luis Obispo and the Mexican border. These areas are ideal due to their rich soils and mild climates. More than 38 percent of California avocados are grown in San Diego 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 successfully 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 growers, enthusiasts and researchers 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 early 1930s 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 – One-fifth of a medium avocado (1 oz.) has 50 calories and contributes nearly 20 vitamins, minerals and phytonutrients, including four percent of the recommended Daily Value (DV) for vitamin E, four percent vitamin C, eight percent folate and four percent fiber.

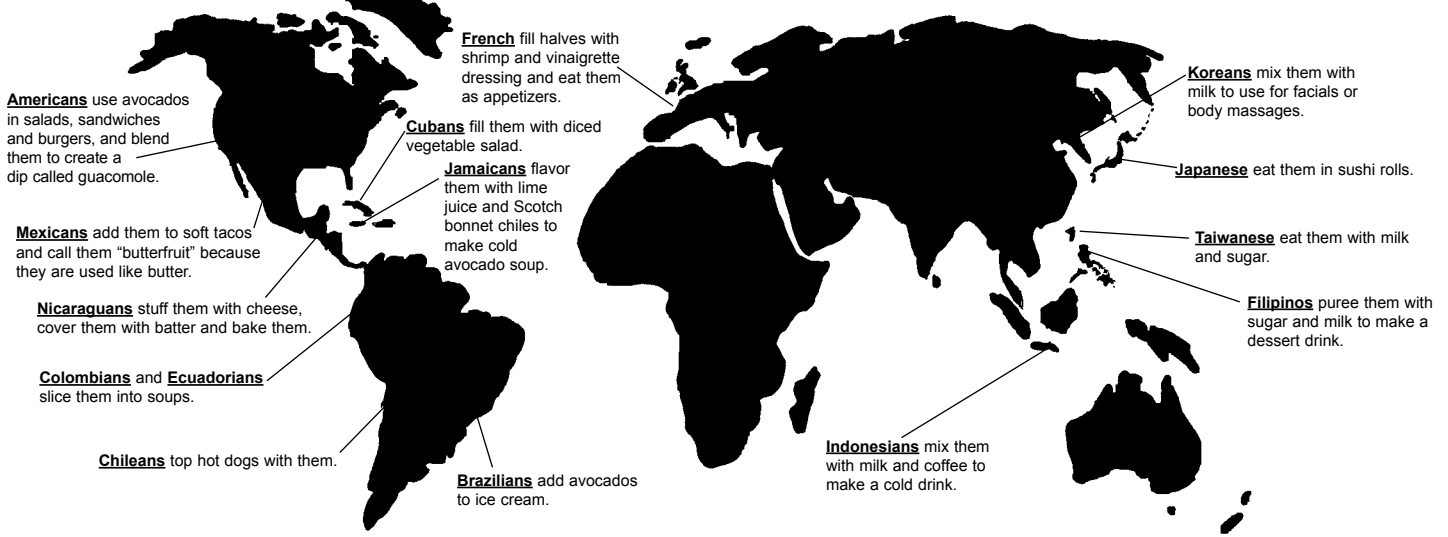
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Avocado Activity Sheet

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 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.
- Examine various avocado skins using a hand lens or microscope.
- 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? Convert to ounces.

Fantastic Facts

1. Are avocados a fruit or a vegetable?
 2. Which variety of avocado accounts for 95 percent of California's crop?
 3. What percentage of the nation's avocado crop does California produce?
 4. Which California county produces more avocados than any other county?
 5. Name one variety of avocado that has a green skin.
 6. How are avocados harvested?
 7. Name one healthy nutrient avocados contain.
 8. How did the Hass avocado get its name?
- 1) Fruit 2) Hass 3) Approximately 90 percent 4) San Diego County 5) Fuerte, Zutano, Bacon, Pinkerton, Reed or Gwen 6) By hand using special shears called clippers 7) Vitamin E, vitamin C, folate, or fiber 8) It was discovered by Rudolf Hass

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. This experiment illustrates ways to speed the ripening process of avocados. Ethylene is a natural hormone emitted from fruit such as avocados, bananas and apples that causes the unripe fruit to ripen.

Materials: At least two avocados per group, bananas, apples, 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 various supplies such as bananas, apples, paper bags, plastic bags and other items you have 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.

