

Harvest of the Month



Network for a Healthy California



Nutrition Facts

Serving Size: ½ medium persimmon (84g)	
Calories 59	Calories from Fat 1
% Daily Value	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 16g	5%
Dietary Fiber 3g	12%
Sugars 11g	
Protein 0g	
Vitamin A 27%	Calcium 1%
Vitamin C 11%	Iron 1%

PERSIMMONS

Health and Learning Success Go Hand-In-Hand

The 2007 CalCHEEPS survey found that less than one out of three California children meet the fruit recommendation for good health and only one in ten eat the recommended cups of vegetables. Increasing students' access to nutrition lessons at school empowers them to make healthy food choices. Use *Harvest of the Month* to encourage healthful behaviors, connect with core curricula, and link the classroom, cafeteria, home, and community.

Exploring California Persimmons: Taste Testing

What You Will Need:

- One ripe Fuyu and Hachiya persimmon per every four students*
- Paper and pencils
- Cutting board and knife

*Refer to *Botanical Facts* on page 2 for information on how to determine ripeness.

Activity:

- Divide class into groups of four and distribute persimmons.
- Observe and feel both varieties of persimmons (whole).
- Cut Fuyus into quarters; as appropriate, scoop Hachiyas.
- Note texture, smell, and taste of each variety.
- Discuss similarities and differences in taste, color, texture, smell, and shape; use descriptive words to explain.
- Determine which variety students prefer and graph results. Share results with school nutrition staff.

For more ideas, reference:

The Power of Choice, USDA, 2003.

Cooking in Class: Persimmon Salad

Makes 36 tastes at 2 tablespoons each

Ingredients*:

- 8 Fuyu persimmons, washed
 - 2 Granny Smith apples, washed
 - 1 lemon, washed
 - 2 small packages honey* (9 grams each)
 - 1 tablespoon fresh mint, finely chopped (optional)
1. Core and chop the persimmons and apples into ½" chunks and place in a bowl.
 2. Cut the lemon in half and squeeze juice into a small container.
 3. Add honey to the lemon juice and mix thoroughly with a whisk.
 4. Pour the lemon-honey dressing over the fruit and gently toss until well coated.
 5. Place 2 tablespoons of fruit salad in a paper tray.
 6. Serve immediately. (If using mint, add just before serving.)

*Do not give honey to children under the age of one.

Nutrition information per serving:

Calories 40, Carbohydrate 8 g, Dietary Fiber 0 g, Protein 0 g, Total Fat 0 g, Saturated Fat 0 g, Trans Fat 0 g, Cholesterol 0 mg, Sodium 53 mg

Adapted from: Tasting Trio Team, *Network for a Healthy California*, 2010.

Reasons to Eat Persimmons

Half of one medium persimmon provides:

- An excellent source of vitamin A.
- A good source of fiber and vitamin C.
- A source of many antioxidants, including beta-carotene*, lutein, zeaxanthin, and lycopene.

*Learn about beta-carotene on page 2.

Champion Sources of Beta-Carotene*:

- Cantaloupe
- Carrots
- Mango
- Papaya
- Persimmons
- Pumpkin
- Spinach
- Sweet potatoes

*Champion sources provide a rich source of beta-carotene.

For more information, visit:

www.nal.usda.gov/fnic/foodcomp/search/
(NDB No: 09263)



What is Beta-Carotene?

- Beta-carotene is a member of the carotenoids, which are a class of more than 600 naturally occurring pigments synthesized by plants, algae, and photosynthetic bacteria.
- Carotenoids are highly colored (red, orange, yellow), fat-soluble compounds naturally occurring in many fruits and vegetables (leafy greens, carrots, sweet potatoes, squash, spinach, apricots, and green peppers).
- The carotene family possesses antioxidant properties. Alpha-, beta-, and gamma-carotene are considered "provitamins" because they can be converted to active vitamin A.
- Vitamin A serves several functions in the body. It helps maintain good vision, fight infection, support cell growth, and keep skin healthy.

For more information, visit:

http://lpi.oregonstate.edu/infocenter/phytochemicals/carotenoids/#biological_activity

http://www.mayoclinic.com/health/beta-carotene/NS_patient-betacarotene

How Do Persimmons Grow?

The persimmon is a deciduous tree, adaptable to a wide range of soils and climates and immune from most diseases and insects. Although the trees can withstand temperatures as low as zero degrees when fully dormant, they do not produce well in high summer heat or desert regions. Trees are either male or female, but some have both male and female flowers; sexual expression can also vary from year to year. Reaching heights of up to 25 feet, trees bear fruit about two to three years after grafting and have a life span of about 10 years.

For more information, visit:

www.crfg.org/pubs/ff/persimmon.html

www.nal.usda.gov

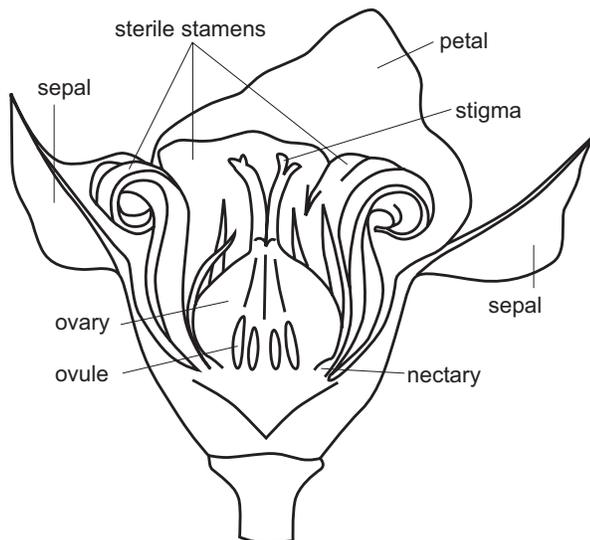


Image adapted from:

www.284.pair.com/florists/all-about-flowers/Persimmon.htm

Floral terminology provided by E. Sandoval, Curator, College of Biological Sciences Greenhouses, University of California, Davis.

To download reproducible botanical images and for more growing information, visit www.harvestofthemonth.com.

Botanical Facts

Pronunciation: per-sim'en

Spanish name: persimo

Family: Ebenaceae

Genus: *Diospyros*

Species: *D. kaki*



Ancient references to the persimmon as "food for the gods" have led to its classification in the genus *Diospyros* of the Ebony family. ("Dios" means God; "pyros" means grain or food.) The English word "persimmon" is derived from the Algonquian language of the eastern United States meaning "dry fruit."

Today, all persimmons cultivated in California (and most in the United States) are of the *D. kaki* species. Although native to China, this species is often referred to as Japanese or Oriental persimmons.* These fruits are generally divided into two categories: astringent and non-astringent.



	Astringent	Non-astringent
Varieties	Hachiya	Fuyu
Color	Bright, deep orange-red	Light orange
Shape	Acorn-shaped	Spherical, pumpkin-shaped
Use**	Must be jelly soft before it is edible; used mostly for baking	May be eaten raw when firm or soft

*See *A Slice of Persimmon History* on page 3 for origin.

**To ripen firm astringent varieties, store at room temperature. To expedite process, place in paper bag with apple or banana.

For more information, visit:

www.sdfarmbureau.org/fuyu

How Much Do I Need?

Half of one medium persimmon is about a ½ cup of fruit. This is about the size of one cupped handful. The amount of fruits and vegetables that each person needs daily depends on age, gender, and physical activity level. Encourage students to find out how many cups of fruits and vegetables they need to eat daily and keep a tracking log to monitor if they are meeting their needs. Remind students that they also need to get at least 60 minutes of physical activity every day.

Recommended Daily Amount of Fruits and Vegetables*

	Kids, Ages 5-12	Teens and Adults, Ages 13 and up
Males	2½ - 5 cups per day	4½ - 6½ cups per day
Females	2½ - 5 cups per day	3½ - 5 cups per day

*If you are active, eat the higher number of cups per day.

Visit www.choosemyplate.gov to learn more.

Student Sleuths

- 1 Some persimmon varieties contain tannins, which cause astringency. What are tannins? What are other sources of tannins?
- 2 Persimmons are high in antioxidants. What are antioxidants and what do they do for the body?
- 3 What is beta-carotene? Describe how beta-carotene is converted to vitamin A in the body.
- 4 Create a presentation on several fruits and vegetables from different parts of the plant we eat (roots, seeds, leaves, fruits, etc.). List the key nutrients found in each item and the health benefits of these nutrients.
- 5 What are the top three persimmon-producing counties in California? Locate on a map. When do these regions harvest persimmons? What similarities are there between these counties (e.g., climate, location, geography)?

For information, visit:

www.crfg.org/pubs/ff/persimmon.html

www.nal.usda.gov/fnic/foodcomp/search/

A Slice of Persimmon History

- The *D. kaki* species originated in China and made its way to Japan more than a thousand years ago.*
- Commodore Perry brought seeds back to the United States from Japan after his 1852-54 expedition. The seeds were first planted in the area around Washington, D.C., but were killed by an early frost.
- In 1870, grafted trees were successfully introduced into Georgia and California by early USDA plant explorers.
- At least 500 different *D. kaki* varieties were brought to California during a major planting spree from 1870 to 1920. In 1877 alone, more than 5,000 plants in 19 varieties were imported from Japan.
- Today, the two major Japanese varieties grown in California are the Hachiya and the Fuyu.

*Persimmons of the species *D. virginiana* (American persimmon) are native to North America, mostly on the East Coast. While it was a food staple of early Native Americans, the species today accounts for less than 1 percent of the country's total crop production.

For more information, reference:

Chez Panisse Fruit, Alice Waters, 2002.

<http://food.oregonstate.edu/faq/uffva/persimmon2.html>



School Garden: Cover Crops

If your school has a garden, here is an activity you may want to implement. Look for donations to cover the cost of seeds, tools, irrigation systems, electric pumps, and any salary incurred by garden educators or others.

Late fall is an ideal time to clean up the garden from summer and prepare it for winter using a cover crop. Cover crops provide soil cover and prevent soil erosion. A legume is a great choice for a winter cover crop for the added benefit of nitrogen. Easy to grow nitrogen rich plants are: red clover, alfalfa, fava beans, or peas. Humans need protein to grow properly. Nitrogen is a component of the protein foods that we eat. Animal and plant foods provide us with protein in our diet.

Activity:

Have students identify protein foods that come from animal and plant sources. This can be done with pictures of different types of food. Discuss how we can eat plant foods high in protein to replace animal protein in a meal.

For more ideas, reference:

The Growing Classroom, Roberta Jaffe and Gary Appel, Life Lab Science Program, 1990, pp. 93-95.

Home Grown Facts

- In 2004, California produced 99 percent of the *D. kaki* crop in the United States.
- Tulare and Fresno counties produce 53 percent of the state's total production.
- Other major persimmon-producing regions include Orange, Riverside, and San Diego counties. A small percentage is grown in Sutter and Placer counties.
- Persimmons reached their peak in popularity during the first half of the 20th century. The Hachiya was the preferred variety, but production declined and has since been surpassed by the Fuyu.

For more information, visit:

www.cdffa.ca.gov

www.crfg.org/pubs/ff/persimmon.html



Just the Facts

- In Asia, persimmons have been cultivated for thousands of years and rank next to citrus fruit in importance, culturally and economically.
- The persimmon is Japan's national fruit.
- The art of hoshigaki — hand-dried persimmons — is an integral part of traditional Japanese New Year's celebrations.
- The Fuyu was developed by breeding out the tannic acid from the Hachiya, making it more appealing to taste and easier to eat whole and raw.
- Persimmon trees are also cultivated for timber (used in golf clubs, textile weaving, and furniture), wildlife (flowers produce nectar for honeybees), and beautification.

Source:

Chez Panisse Fruit, Alice Waters, 2002.

www.mfc.state.ms.us/seedlings/



Student Champions

After the persimmon was introduced in America in the late 1800s, it became one of the country's most popular fruits, particularly in California. Although California continues to lead the nation in persimmon production, its popularity has declined considerably. Using what they have learned in class, students can "re-introduce" the persimmon to the community.

- Write an article that describes the two main varieties and the nutritional benefits. Include examples of how they can be used in meals and recipes. Submit articles to local print outlets.
- Design posters or brochures to promote the nutritional benefits and uses of persimmons. Include healthy holiday recipes. Display on campus or at grocery stores, persimmon stands, or farmers' markets.

Physical Activity Corner

Movement increases breathing and heart rate so that more blood flows to the brain. Integrating physical activity into the classroom can help optimize student performance.

Objective:

Kinesthetic movement, nutrition education

Activity:

- Students jump up and down (or hop on one leg)*
- Call out one of the fruit/vegetable color groups (red, green, yellow/orange, etc.)
- One at a time, each student calls out a fruit or vegetable within named color group
- Continue for all color groups

*Variations may involve identifying different movements to represent fruits and vegetables or the different color groups. For example, jumping may represent red fruits while running in place may represent blue/purple vegetables.

For more ideas, visit:
www.take10.net



Cafeteria Connections

The sweet and spicy Fuyu has apricot and cinnamon flavors that are appealing to children. It is easy to prepare and does not brown quickly. Introduce students to this unique fruit by incorporating it into the school menu. Share serving ideas with school nutrition staff.

- Use firm Fuyus as a "cracker" and pair with other fruits or lowfat cheese.
- Pair Fuyu with a crisp vegetable and a dip.
- Offer sliced or shredded persimmons in the salad bar.

Other ideas for incorporating persimmons.

- Ask students (grades K-5) to develop a snack recipe.
- Ask students (grades 6-8) to develop a lunch recipe.
- Gather healthy holiday recipes that contain persimmons to share with students and families.

For more ideas, visit:
www.fns.usda.gov/tn/

Literature Links

Ask librarian to help students with a research project. Divide students into groups to research the ancient Japanese art of hoshigaki. Have students select a topic of interest and present findings to class in the library. Topics may include:

- Demonstration of method used to hand-dry the fruit
- How the practice/art evolved and how it is different today
- Historical significance in Asian culture
- Global locations of where it is practiced today

For background information and book lists, visit:
www.cfaic.org/trg/pdf/trg2009.pdf
www.cfaic.org/Bookshelf/Bookshelf.php
www.sarep.ucdavis.edu/cdpp/foodsystems
www.slowfoodusa.org/ark/japanese_persimmon.html

Adventurous Activities

Science Exploration:

Cut persimmons will brown when exposed to air. Ask students to first research the concept of enzymatic browning or oxidation. Have students hypothesize what can be done to prevent this reaction from occurring. Then test students' hypotheses in an experiment using both Fuyu and Hachiya persimmons. Students compile information on graphs and present to their peers.

For more activities, visit:
www.harvestofthemonth.com