

# HAWAII COOPERATIVE EXTENSION SERVICE

Hawaii Institute of Tropical Agriculture and Human Resources  
University of Hawaii at Manoa

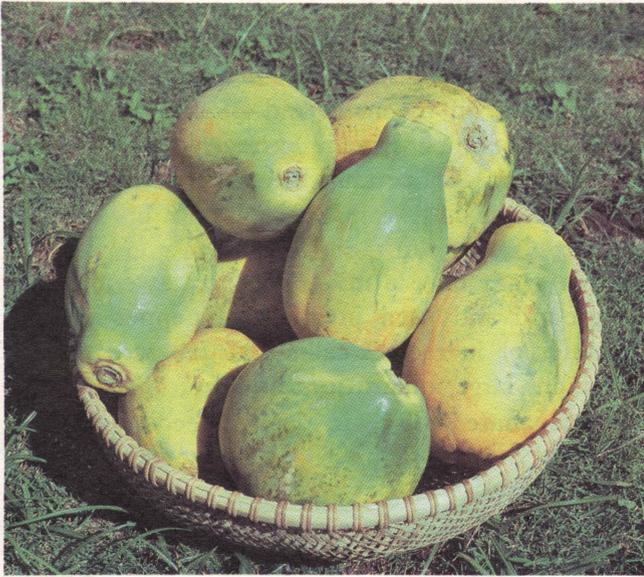
## COMMODITY FACT SHEET PA-1(A)

### FRUIT



## PAPAYA

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Botanical name: *Carica papaya* L.  
Hawaiian: he'i  
Samoan: esi

### Description

Papaya is a mildly sweet, melonlike fruit, round to oblong in shape and 3 to 5 inches in diameter. The skin is smooth and thin, shading from green in immature fruits to deep orange-yellow when ripe. The flesh, 1 to 2 inches thick, varies from pale yellow to a deep salmon-pink in color. The central cavity of the fruit contains many round black seeds.

The exact origin of papaya is uncertain. In 1911, the Solo papaya was introduced by the Hawaii Agricultural Experiment Station as a new variety. Now it is the only variety grown commercially.

### Nutrition Information

Half of a small green papaya (100 grams) provides

35 calories; 43 calories are provided by half of a ripe papaya the same size. The calories in the papaya come mostly from complex carbohydrates. Both green and ripe papayas are an excellent source of vitamin C, providing more than 100 percent of the recommended dietary allowance (RDA). Ripe papayas also are a reliable source of carotene, which the body converts to vitamin A (see Fig. 1). Both carotene and vitamin C increase as the fruit ripens.

Papaya is a reasonably good source of potassium for those individuals who need to replace losses that occur when diuretics are prescribed. Half a ripe papaya provides 234 mg of potassium, or 12 percent of an adult's RDA.

### Papaya, ripe and green

100grams= 1/2 small papaya or 1/2 cup puree  
43 calories, ripe  
35 calories, green

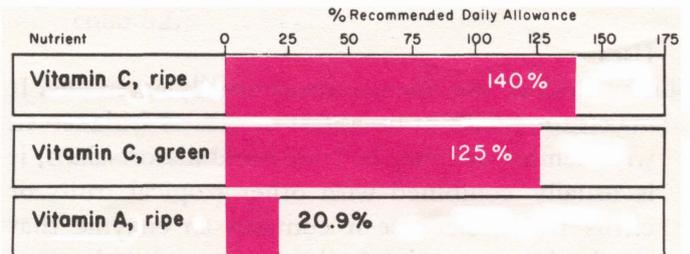


Figure 1. Major nutrients in 100 grams papaya, given as percentage of U.S. RDA.

### Selection

Select fruit with skin that is unbroken, unbruised, and free of signs of deterioration. For immediate consumption, select fruit that is yellow with some green remaining. For later consumption, buy fruit that has at least some yellow color.

Nutrients in 100 g papaya

Nutrient	Green	Ripe
Calories	35	43
Protein	< 1 g	< 1 g
Calcium	18 mg	29 mg
Phosphorus	12 mg	11 mg
Iron	.2 mg	.2 mg
Vitamin A	45 IU	1047 IU
Thiamin (vit. B <sub>1</sub> )	.03 mg	.03 mg
Riboflavin (vit. B <sub>2</sub> )	.03 mg	.04 mg
Niacin	.2 mg	.3 mg
Ascorbic acid (vit. C)	75 mg	84 mg

Generally, papayas found on the market are graded Hawaii No. 1. Occasionally, Hawaii No. 2 papayas may be found in open markets. These are usually cheaper but are just as nutritious.

Papaya quality, flavor, and supply depend on the season and the amount of soil moisture. Although papayas are available all year, fruit yields are usually greatest in October and November.

If you wish to grow your own papayas, consult your local county extension agent for information.

#### Storage and Preservation

Unripe papaya should be stored at room temperature until ripened. Ripe fruit should be refrigerated until used. Papayas should not be frozen whole because of the resulting deterioration in flavor and texture. You can preserve papaya by freezing the puree, however, or drying the papaya slices in a drying oven or solar dryer.

#### Uses

The flesh of the ripe papaya is usually eaten raw. It makes an excellent breakfast or dessert fruit served with lemon or lime. In fruit cocktails or salads, it is usually combined with other tropical fruits or citrus fruits. Because it contains an enzyme that breaks down protein, fresh papaya cannot be used in gelatin salads and desserts. A variety of products such as drinks, jams, marmalades, nectars, ice cream, sherbet, yogurt, and pie may be made from ripe papayas.

Green papayas are sometimes cooked as a vegetable; they also can be pickled or candied. Papain, the protein-splitting enzyme found in green papaya, is extracted and sold commercially as a meat

tenderizer. This tenderizing effect can also be achieved by laying slices of green papaya or green papaya skin on the meat and allowing it to stand for several hours. Papain extract is also used as a treatment for certain intestinal and digestive problems.

Papaya seeds have a mild, peppery taste and may be ground and used in place of pepper in salad dressings or in recipes calling for mustard seed. If eaten in large quantities, however, the benzyl-isothiocyanate (BITC) in papaya seeds may cause diarrhea.

#### Papaya Bread

(A good way to use overripe papaya)

- 3/4 c. sugar
- 1/2 c. margarine
- 2 eggs
- 1 c. mashed ripe papaya
- 1 1/2 c. flour
- 1 t. baking soda
- 1/4 t. baking powder
- 1/2 t. salt
- 1/2 t. cinnamon
- 1/2 t. allspice
- 1/2 t. ginger
- 1/2 c. raisins
- 1/4 c. chopped walnuts (optional)

1. Cream sugar and margarine together until light.
2. Add eggs and beat until fluffy.
3. Add papaya and mix.
4. Sift dry ingredients together and add to creamed mixture. Mix until smooth.
5. Stir in raisins and walnuts.
6. Pour mixture into two greased 8X4-inch loaf pans.

7. Bake at 325°F for approximately 45 minutes or until golden brown. Use a toothpick to check for doneness. Yield: 2 loaves.

#### *Chicken Papaya Soup*

- 2 chicken breasts (1 lb.) or half a fryer
- 1 T. fresh ginger, minced
- 4 c. water
- 1 green papaya (select the greenest papaya available at the supermarket or find a Filipino market where immature green papayas are sold)
- A dash of salt

1. Cut boned chicken into 1- to 2-inch pieces.
2. Simmer chicken pieces and ginger in water for half an hour.
3. Peel, seed, and cut papaya into 1-inch cubes.
4. Add papaya to soup and continue to simmer for another half hour or until papaya is tender.
5. Season to taste and serve. In the Philippines, bagoong or patis sauce is used to season papaya soup. Yield: 4 servings.

#### *Papaya Seed Dressing*

- ½ c. sugar
- 1½ t. salt
- ½ t. dry mustard
- ½ c. white wine (or tarragon) vinegar
- ½ c. salad oil
- Half a small onion
- 1 T. fresh papaya seeds

1. Place all dry ingredients and vinegar in blender. Blend at low speed for several seconds.
2. Add salad oil and onion and blend thoroughly.
3. Add papaya seeds. Blend until seeds are about the size of coarsely ground pepper. Yield: 1½ cups.

#### **Exporting Papayas**

Papayas must be fumigated before they are sent or carried out of the state. Fumigated papayas may be purchased at the airport or through vendors who will mail or deliver to the airport. For a small fee, the general public may have papayas fumigated at the State Department of Agriculture Plant Quarantine Station. Once sealed and stamped, a box of fumigated papayas cannot be opened until it leaves Hawaii.

Papayas for export are also dipped in hot water to prevent storage decay. While this is not required by law, specialists consider it absolutely necessary.

#### **For More Information**

Agriculture Plant Quarantine Station  
701 Ilalo Street  
Honolulu, Hawaii 96813  
Phone: 548-7175

Papaya Administrative Committee  
929 Queen Street, Room 204  
Honolulu, Hawaii 96814  
Phone: 533-3871

*Fruit and Vegetable Facts and Pointers—Papaya.* 1980. United Fresh Fruit and Vegetable Association, North Washington at Madison, Alexandria, VA 22314.

*Papayas in Hawaii.* 1970. University of Hawaii, Cooperative Extension Service Circular 436.

#### **References**

*Enjoy a Slice of the Islands.* 1972. Papaya Administrative Committee. Hawaii Dept. of Planning and Economic Development.

Miller, Carey D., Katherine Bazore, and Mary Bartow. 1965. *Fruits of Hawaii.* Honolulu: The University Press of Hawaii.

Miller, Carey D., and Barbara Branthoover. 1952. *Nutritional Value of Some Hawaii Foods.* Hawaii Agricultural Experiment Station Circular 52.

*Nutritive Value of American Foods.* 1975. Agricultural Research Service, USDA. Agriculture Handbook No. 456.