

# PAPAYA

Pawpaw, Melon Tree

*Carica papaya*

Caricaceae

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## ECHO® PLANT INFORMATION SHEET

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### Origin

The Papaya is presumed to be of tropical American origin, perhaps in southern Mexico and neighboring Central America. Presently it is grown worldwide in the tropics. Current major producers include Brazil, Mexico, Indonesia, Africa, and India.

### Uses

Papayas are eaten fresh, often with lemon or lime juice and sugar, or used to make jams, jellies, and ice cream. The unripe fruit may be pickled or cooked as a vegetable like summer squash. The leaves also may be eaten cooked as a vegetable. Leaves have been used as a substitute for soap to wash delicate fabrics. Leaves and fruit canning residues may be used for pig feed.

### Common Names

### Cultivation

Papaya is grown from seeds. Seedlings may be initiated in planting beds, in peat pots, or in plastic bags; sow seeds 5 cm (2 in) apart and 1 cm (0.5 in) deep in rows 15 cm (6 in) apart. Transplant at 6-8 weeks when plants are 25-30 cm (10-12 in) tall into rows or on ridges 2.5-3 m (7-9 ft) apart with plants 22.5 cm (9 in) apart in fertile well drained soil. The plant grows rapidly to small tree size, but lacks woody tissue. Papaya prefers humid tropical climates. It is not frost tolerant and requires frost protection in subtropical environments. Papayas are shallow rooted plants; they are vulnerable to wind damage and may require shelterbelt protection. Papayas have high water demands. Rainfall of 1500 mm (60 in) or more, well distributed throughout the year, is ideal. However, Papayas are sensitive to even short periods of flooding and recover slowly from flooded conditions. The flowers are yellowish, sweet smelling, opening at night, and moth pollinated. Normally, Papaya plants are unisexual; some plants having only staminate (male) flowers; other plants only pistillate (female) flowers. Only female plants produce fruit. After Papaya plants reach the flowering stage, the number of male flowering plants may be reduced to a ratio of approximately one male plant for every 15-25 female plants. The cultivated variety 'Solo' typically has 1/3 trees with female flowers and 2/3 trees with hermaphroditic (bisexual) flowers. The hermaphroditic trees of this variety act as the pollen source both for their own flowers and nearby female flowers.

### Harvesting and Seed Production

Papaya trees begin bearing fruits at the end of the first year. Bearing peaks in the second year and declines strongly in subsequent years. In tropical environments bearing is year round; in subtropical regions bearing is seasonal. The fruits produced from the 'Solo' female flowers typically produce round fruits in comparison with the larger, more elongate fruits from the hermaphroditic flowers. Mature fruits are harvested when the tip turns yellow. Fruits at this stage may be kept in refrigerated storage (10° C/50° F) for up to 3 weeks. Fruits stored at room temperatures should be out of the direct sun and in ventilated containers. Handle fruits carefully at all stages to prevent bruising, as bruised fruits are subject to a fungal decay at wound spots. Please Note: Papaya readily cross-pollinates with other Papayas. As such, it is very difficult to collect pure seed from fruits you have grown yourself. If you need pure seed, you may want to order it directly from our suppliers (*Known-You Seed Co., Ltd.*, 26 Chung Cheng 2nd Road, Kaohsiung, Taiwan 802 ROC, Ph: 886-7-224-1106; FAX: 886-7-222-7299 and the *University of Hawaii, College of Tropical Agriculture*, 3190 Maile Way Room 112, Honolulu, HI 96822 USA, Ph: 808-956-7890, FAX: 808-956-3894).

### Pests and Diseases

A variety of insect pests may attack Papayas depending upon the region in which they're grown. Webworms, Papaya fruit flies, and Papaya white flies infest Florida grown Papayas. Rootknot nematode may be especially troublesome on sandy soils, though mulching may help plants withstand nematode attacks. Papaya plants are subject to both fungal and viral disease. Anthracnose and Powdery Mildews may be treated with fungicides. Viral distortion ringspot and mild mosaic diseases lack treatments but healthy plants in well fertilized soils appear more resistant to viral diseases. If possible, plant a variety that has been cultivated for your particular region; selected varieties will have more appropriate disease resistance properties or better climactic adaptations. For example, a ringspot resistant variety of Papaya called 'Cariflora' has been developed for South Florida growers. The Malaysia Exotica Papaya, a cultivar developed by crossing 'Sunrise Solo' with a Malaysian Papaya, is a high quality fruit producer with successful adaptations to the Malaysian climate.

### Cooking and Nutrition

The ripe fruit is often added to fruit salads or used to make jams, jellies, and ice cream. The fruit pulp and nectar from the combined juice and pulp is canned. The unripe fruit may be pickled or cooked as a vegetable like summer squash. The protein digesting enzyme, papain, obtained from the latex of scratched green fruits, is a valuable commercial product. The enzyme is marketed commonly as a meat tenderizer; in some cultures raw meats are wrapped in Papaya leaves to soften them. Papain is used also as a beer stabilizer; as toothpaste and chewing gum ingredients; in hide tanning; as a natural rubber coagulant, and as a worming medication. A leaf alkaloid, carpapine, is extracted for use as an anti bacterial agent.

### References

Morton, J. 1987. Papaya. p. 336–346. In: Fruits of warm climates. Julia F. Morton, Miami, FL.  
<http://ecocrop.fao.org/ecocrop/srv/en/cropView?id=630>