

Papaya

for Orange County

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Papaya is a truly tropical perennial from Central America that is marginally hardy to Orange County. Almost everyone who has grown Papaya plants has had some success, but most will also admit that they've had more failures than successes. Lovers of papaya fruit will not stop trying.

Papaya, *Carica papaya*, is a perennial herb that somewhat resembles a palm. It grows a vertical hollow stem 10-20 feet or more tall and enlarging to 12-18" thick at its base. The large green leaves are palmately divided into 5-9 lobes. The 2-foot wide leaves are attached to the stem by petioles up to 3 feet long. The leaves emerge from the top of the stem and are held nearly horizontal for about 5 months. Older leaves drop leaving a fairly smooth "trunk". The flowers form on the stem at the base of each leaf and the fruit follows. The fruit ripens about 10 months later. In the tropics, a plant will ripen 2-3 fruit per week and as much as 300 lbs. per year. Fruit is picked when the green color of immature fruit is nearly gone.

Papaya plants have 3 flower forms possible. The most desirable is **hermaphrodite** where the long flower contains both functional male anthers and female stigma. Hermaphrodite plants are self fertile and can pollinate female plants. **Female** plants produce shorter flowers with no male parts. Females often produce fruit without pollination but, the fruit is seedless and it is usually smaller than normal. **Male** plants have tiny flowers in large clusters. Male plants make no fruit, but often change sex when beheaded. Male plants are usually rare. Our seed suppliers know the ratio of sexes that grow from the seeds of each variety. We list it as % hermaphrodite/ %female. You should plant more than one if the chances of acquiring a hermaphrodite are 50% or lower.

Locally papaya plants are quite vigorous from mid-spring to mid-fall, but are in decline when exposed to night temperatures much below 55°F. Cold, wet, waterlogged soil in winter will cause the roots to rot and the plant to fall over. The immature fruit over winters on the stem and heavy rains can lead to rot. The foliage actually tolerates light frosts decently.

For best results papayas should be grown where winter temperatures stay the warmest (greenhouse if possible). Papayas planted very close to a house wall can send their roots under the foundation, which is several degrees warmer. The wall of the house also radiates some heat and the eaves trap heat. The south wall of a home is definitely warmer than the north or east wall. A papaya in a container can be moved under protection during the winter.

In Orange County night temperatures in winter seem to stay higher in the cities closer to the center. Costa Mesa and Santa Ana may be 15° warmer at night than the foothill areas. In hilly neighborhoods the hilltops are significantly warmer than their bases. Neighborhoods in canyon bottoms or next to rivers usually experience the coldest temperatures.

It is very important to grow papayas in soil that will not promote root rot. Sand, decomposed granite, pumice and combinations of the above are excellent. Any type of organic material used as a soil, or as a soil amendment can promote rot. As organic materials decompose the oxygen levels drop as well as the permeability of the soil. The only safe organic materials may be rice hulls and charcoal, which are nearly inert (don't decompose).

The soil should also drain perfectly. There are a few neighborhoods where drainage is perfect and puddles never form. In most gardens the drainage must be improved. Building raised beds or simply making tall mounds of soil accomplishes this. A French drain, or a dry well can also be built.

Papayas can perform well in large containers. Pure pumice or nearly pure pumice (mix with a little sand or peat) works quite well.

Papaya plants prefer average water, however, it is better to err on the side of dryness. Fertilizer requirements are not unique, most all-purpose fertilizers are fine.

Papaya Varieties

At this time we are not certain which variety or varieties deserve our highest recommendation. Generally, however, the larger fruited varieties have performed better, possibly because they have significantly thicker stem and size alone is a better insulator from cold. Most papaya lovers prefer the smaller fruit (personal size). The following descriptions are from fruit grown under near tropical (ideal) conditions:

Bella Medium size fruit (3.6 lbs.) has red/pink flesh with good sweetness. Virus tolerant vigorous plant. 50%/50%

Known You Large fruit (5.1 lbs.) with sweet yellow flesh. The notably thick, sturdy stem begins blooming at 2' tall. Virus tolerant. 50%/50%

Linda Small fruit (1.1 lb.) with very sweet pink flesh. 66%/33%

Gold Maradol Large (7 lbs.) fruit with mildly sweet yellow flesh. Good for processing. Tolerates leaf spot disease. 50%/50%

Red Maradol Medium size (4.4 lbs.) fruit with medium sweet red flesh. Begins blooming at 16" tall. 66%/33%

Improved Red Maradol Large (4.4 lbs.) fruit with sweet red flesh. The fruit "shell" is sturdier and more adaptable to unfavorable climates. 66%/33%

Red Matador (Red Maradol selection) Medium size (4.4 lbs.) fruit identical to *Red Maradol* but with improved flesh quality and uniformity. 66%/33%

Red Lady Medium size fruit (3.9 lbs.) with medium sweet red flesh. Blooms at 2' tall with high yield. Tolerates heat and virus. 50%/50%

Improved Solo Sunrise Small fruit (1.2 lb.) with very sweet red/pink flesh. Tolerates some diseases. 66%/33%

Taiwan Solo Sunrise Small fruit (1 lb) with sweet red/pink flesh. Begins blooming at 3'. 66%/33%

Sun Gold Large fruit (5 lbs.) with extremely sweet yellow flesh. The robust, virus tolerant plant begins blooming at 2' tall. 50%/50%

Tropical Red hybrid Small fruit (1.4 lb.) with very sweet red/orange flesh. The skin is strong.

The stem has short internodes creating a dense canopy. Early to start blooming.

Waimanalo X-77 (Kamia) Small fruit (1.5 lb) with very sweet yellow/orange flesh. Begins blooming at 2'. Tolerates some diseases. Loves heat. 66%/33%

Others We may or may not have the following in stock:

Babaco This is a hybrid mountain papaya that actually prefers cooler (40-80°F) temperatures and partial or filtered sun. The slender stem will carry a large load of cucumber-shaped fruit (1.5 lb.) with thin, edible skin and seedless orange flesh. Unfortunately it is barely sweet, much better if sugar or honey is added.

Florida Jack This may not be a variety recognized by authorities but the seeds are being shared locally. It apparently is a small "solo type" fruit that sweetens better locally than other varieties. Unfortunately many of the seeds we have grown have produced male plants. Interestingly, the male plants have produced fruit, meaning that the plant is actually dioecious.

A Note about PRSV

Papaya Ring Spot Virus (PRSV) is a malady that weakens Papaya plants and greatly reduces productivity. Its main symptom is the production of malformed leaves when very young (seedling stage). In many areas of the World, genetically engineered Papaya have been created to deal with this problem. The FDA has approved its use as the plants were given a non-virulent form of the virus. The claim is that the form of virus present in the fruit is not any more dangerous than the fruit that had the virulent virus (which has been sold for decades). Some experts feel that potentially some people may experience an allergic reaction to the genetically engineered fruit.

*Genetically engineered papaya fruit has been sold commercially for well over a decade. The genetically engineered varieties on our list are the following: **Bella, Known You, Red Lady, and Sun Gold.***

On the flip side, you may want to grow these virus-tolerant varieties, however, there is no guarantee that they will be virus free in Southern California. The PRSV resistant varieties were developed in

various areas around the World to tolerate the strain of PRSV found in that region.

Currently, PRSV resistance is also being introduced by hybridizing commercial Papaya with other, non-food producing, and virus-resistant species.

Development along these lines continues.

PRSV also affects many types of melons.