



Rare Fruit for Climates with Relatively Frost Free Winters

- ❖ These fruiting plants will tolerate occasional temperatures at or below freezing. Although many prefer temperatures not below 40 degrees F., all will fruit in areas with winter temperatures that get down to 32 degrees F. Some plants may need frost protection when young.
- ❖ Some will survive temperatures into the mid or low 20's F. or below.
- ❖ Most of these plants have little or no chilling requirements.

Chill Hours

- As the days become shorter and cooler in fall, some plants stop growing, store energy, and enter a state of dormancy which protects them from the freezing temperatures of winter. (deciduous plants lose their leaves) Once dormant, a deciduous fruit tree will not resume normal growth, including flowering and fruit set, until it has experienced an amount of cold equal to its minimum “**chilling requirement**” followed by a certain amount of heat.
- A simple and widely used method is the **Hours Below 45°F model** which equates chilling to the total number of hours below 45°F during the dormant period, autumn leaf fall to spring bud break. These hours are termed “**chill hours**”.

How a fruit tree actually accumulates winter chilling is more complex . Research indicates fruit tree chilling:

- 1) does not occur below about 30-34°F,
- 2) occurs also above 45°F to about 55°F,
- 3) is accumulated most effectively in the 35-50°F range,
- 4) is accumulated most effectively early in the dormant period, and
- 5) in early dormancy can be reversed by temperatures above 60°F.

- Chill hour requirements may vary from fruit type to fruit type or even between cultivars or varieties of the same type of fruit.
- Chill hour requirements may be as high as 800 chill hours or more or as low as 100 chill hours or less.
- Fruit trees that require less than 400 chill hours are generally considered to be “low chill”.

Minimum Temperatures and Heat Units

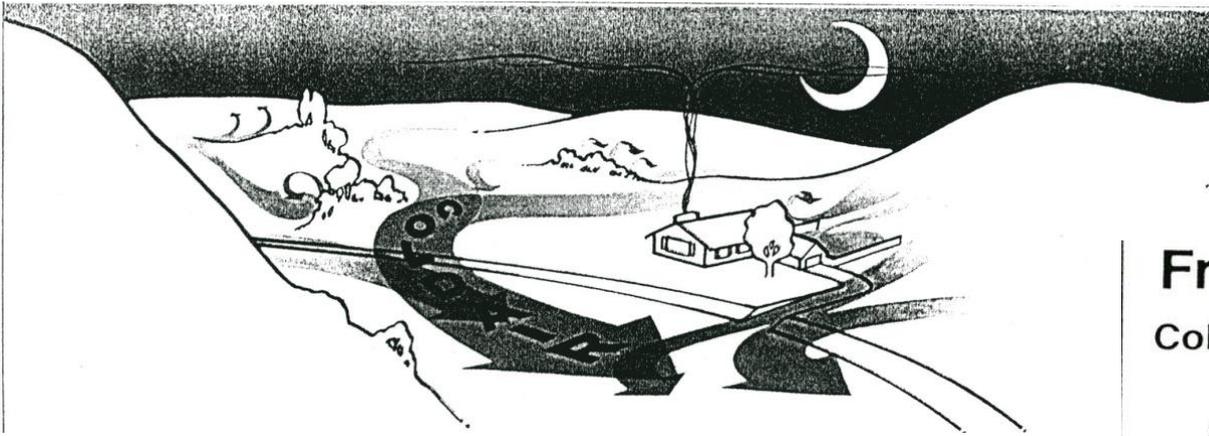
- Temperature (high and low) is one of the most limiting environmental factors for growth and production of fruits in the world.
- If temperatures are too high plants may be injured or killed or fruit may not be produced.
- For some fruit species minimum temperatures may injure or kill fruiting plants.

Heat Units

- Some fruit species may need higher temperatures to flower and fruit properly, to ripen the fruit, to produce pigments that color the fruit or to produce sugars that sweeten the fruit.
- These heat requirements may vary from fruit type to fruit type or even between cultivars or varieties of the same type of fruit.

Microclimates and Cold

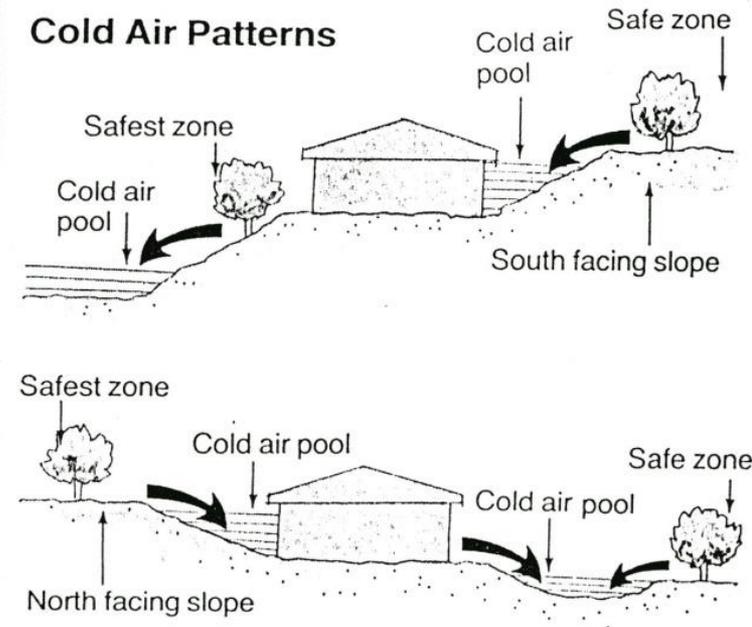
- Slope will affect airflow: warm air rises, cold air sinks.
- Because hillsides are never as cold in winter as the hilltops above them or the ground below them, they're called thermal belts. Lowland areas into which cold air flows are called cold-air basins.



- Cold air travels like water. Cold air flows down and away from sloping land, damming up behind objects and settling in low spots. Put cold sensitive plants high on slopes where cold air will drain away but not pool up near the bottom of the slope.

Frost Patterns & Protection

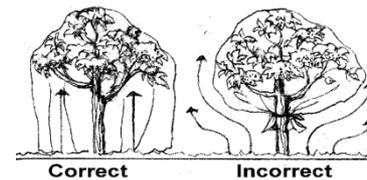
Cold Air Patterns



Frost Protection



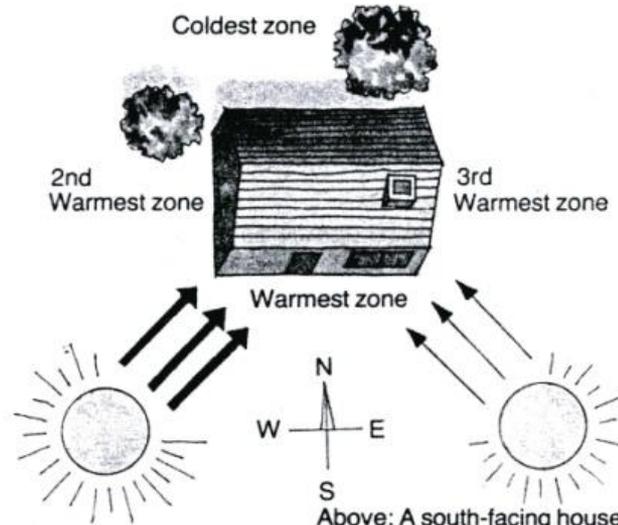
- In areas that get only occasional frost or freezing temperatures gardeners can shelter small trees with a covering of fabric and/or a clear plastic tarp. **Coverings should be vented or removed during warm days to prevent excessive heat build up which can damage or kill plants.**
- Coverings are weighted to the ground when freezing temperatures occur forming a tent to gather and trap heat from the earth. Placing trash cans filled with water inside this structure can help to maintain warmer temperatures inside of the structure until the water turns into ice.
- Another strategy is to include a few incandescent light bulbs or old-fashioned, heat-producing Christmas tree lights underneath the covering to add a few degrees overnight.
- Growing plants next to a south-facing wall or under a bit of high shade will also offer a degree or two of protection. The use of an anti-transpirant will also help.
- At some point plants get too large to cover. Older trees do withstand cold temperature drops more easily.



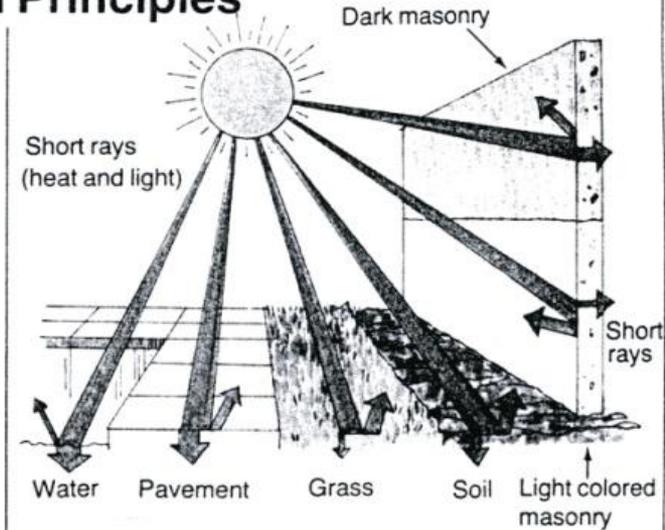
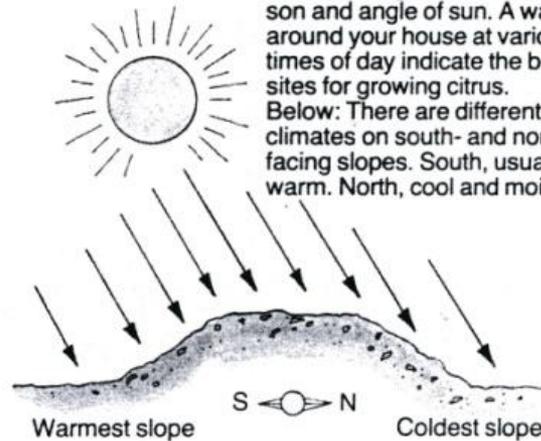
Microclimates and Heat

- Because the buildings, sidewalks, and pavements reflect heat; garden beds on the south side of an east-west wall will be much warmer than garden beds on the north side of the same wall.

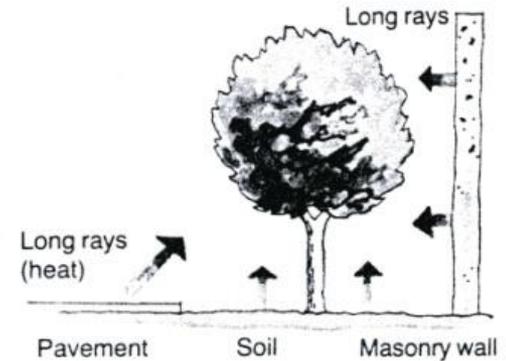
Microclimates and Radiation Principles



Above: A south-facing house with typical microclimates. These change with the season and angle of sun. A walk around your house at various times of day indicate the best sites for growing citrus. Below: There are different climates on south- and north-facing slopes. South, usually warm. North, cool and moist.



Range for frost-tender citrus can be extended by planting them against a surface that absorbs daytime heat and releases it slowly at night. Different surfaces vary as to heat and light reflected, absorbed or stored.



What is a rare fruit?

A fruit is considered to be rare fruit because it is:

- - of unusual properties, such as the Miracle Fruit which changes the sense of taste.
- - a new fruit variety, species or hybrid that has recently been discovered or introduced
- - is scarce , has fallen out of production or is no longer available (such as the “Whitsell” avocado, the “Variegated Valencia” orange or the “Snowball” Apricot) or is endangered or is about to become extinct.
- - not normally grown in a particular area (the Jaboticaba is a rare fruit tree in California, but not in Brazil, an Apple may be rare in the tropics but not in North America, Citrus may be rare in areas with freezing weather but not in areas that are relatively frost free.)

What is a rare fruit?

A fruit is considered to be rare fruit because it is of unusual properties

MIRACLE FRUIT

Synsepalum dulcificum

- An evergreen bush or tree growing to 5 -18 ft.
- An acid soil is a **must!** Soil pH 4.5 to 5.8.
- Does best in partial shade.
- Young plants intolerant of frost. Older plants can survive a light frost.
- The fruit is approximately 1-2 inches long with a single seed.
- Although not sweet itself, when the fruit is eaten and the fleshy pulp coats the taste buds, bitter and sour foods (such as lemons and limes or coffee) will taste sweet.
- The effect remains for some 30 minutes or more.



RAISIN TREE

Hovenia dulcis

- A deciduous tree 30 to 70 feet.
- Cold-hardy to about -10° F.
- The edible “raisins” are short, swollen mature flower stalks which support the inedible seed pod. The peduncle of stem swells, becomes knobby and turns a translucent reddish brown as the pod matures.
- The peduncle is ready to eat when it falls to the ground. The “raisins” (peduncles) are chewy and sweet with a pear-like flavor.
- Although the edible portions are small, the crop is copious.



- The brown seed pod which is actually the fruit is not used.

JABOTICABA

Myrciaria cauliflora

- Native to Brazil, introduced into California about 1904.
- A Small tree or shrub to 15 feet , cold hardy to about 25 degrees F.
- Flowers and fruit grow all over the trunk and main branches in a **cauliflorous** habit.
- The plant may fruit up to five times per year.
- Fruit is reminiscent of a thick- skinned grape. The skin is tough and somewhat bitter but the flesh is soft, tender and very delicious.



PINEBERRY STRAWBERRIES

(*Fragaria chiloensis* X *F. virginiana*)



- Pineberry plants are albino strawberry cultivars that yield fruit with white to pinkish-hued fruits that start out green, and have red seeds.
- Like common garden strawberries, plants like full sun, prefer a soil pH of 5.8 – 6.2, are susceptible to verticillium wilt and live & are productive for about 5 years. Fruit do not ripen after they have been picked.
- Plants have an everbearing fruiting habit.
- The pink blush may be more prominent on fruit that gets more sun exposure.
- The fruit has a pleasantly pineapple aroma and taste, and is smaller than most modern domestic garden strawberries.
- Plants are partially self-pollinating. Cross-pollination between a red strawberry variety and a Pineberry will likely increase fruit yield in both plants.

What is a rare fruit?

A fruit is considered to be rare fruit because is endangered or is about to become extinct.

CHILEAN WINE PALM

Jubaea chilensis



- Slow-growing trees 50-80 feet. Trees have impressive 4-6 foot diameter trunks.
- Intolerant of hot, humid tropical or subtropical climates. They are hardy to about 20° F.
- The palms have become threatened in the wild because of extensive sap collection from them, which ultimately kills the tree. The species is now protected by law in Chile.
- The 2 inch fruit are fleshy and sweet.
- Each fruit contains a single hard, smooth-shelled nut about 1-1/2 inches in diameter with an open-centered edible kernel, known as cokernut or pygmy coconut.
- The nut tastes like a miniature coconut.



What is a rare fruit?

A fruit is considered to be rare fruit because it is a new fruit variety, species or hybrid that has recently been discovered or introduced.

- Breakthroughs by Zaiger Genetics and others in fruit hybridizing are yielding new fruit types (many are interspecific hybrids) and cultivars with especially desirable new flavors, aromas, textures, degrees of sweetness and appearances.
- Interspecific hybrids result from the cross-breeding of two or more species, usually through multiple generations.
- These new fruit types or fruit cultivars will differ in:
 - Their chilling requirements (both low chill and higher chill varieties are being introduced)
 - Their need for cross-pollination
 - Their susceptibility to insects or diseases
 - The pruning shape (open vase, modified open vase, central leader or modified central leader)
 - The type of fruit wood the fruit is produced on
 - Fruit season
 - Fruit color, flavor, size and other fruit characteristics

SWEET CHERRIES *Prunus avium*

MINNIE ROYAL CHERRY

- Medium-sized red cherry, firm with good flavor.
- The tree is very productive with a very low chill requirement, 200-300 hours or less.
- Pollenized by Royal Lee.



ROYAL LEE CHERRY

- Medium-sized red cherry, very firm with excellent flavor.
- Very low chilling requirement, 200-300 hours or less.
- Pollenized by Minnie Royal.



INTERSPECIFIC HYBRIDS

- **CHERRY PLUM** (Cherry X Plum)
- **PLUERRY** (Japanese Plum X Sweet Cherry)
- **PEACH-PLUM** (Peach X Plum)
- **NECTAPLUM** (Nectarine X Plum)
- **PEACHCOT** (Peach X Apricot)
- **PEACOTUM** (Peach x apricot x plum)



INTERSPECIFIC HYBRIDS

- **PLUM-COT** (Plum X Apricot)
- **APRIUM** (Plum X Apricot X Prunus sp.)
- **PLUOT** (Plum X Apricot X Prunus sp.)



INTERSPECIFIC CITRUS HYBRIDS

- Many types of citrus hybrids are now available. Although some are quite familiar, others are very scarce (or rare) or are new introductions.



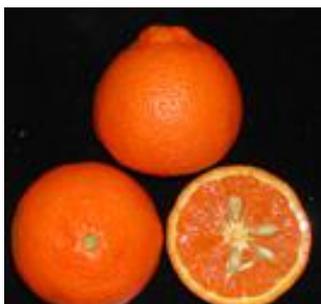
Valentine Pummelo 'Siamese Sweet'
Pummelo X 'Ruby' Blood Orange X 'Dancy'
Mandarin



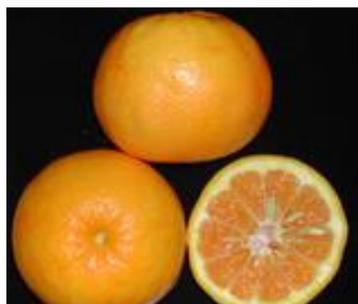
Chironja Orangelo – Grapefruit X Orange.



Wekiwa Tangelolo – Grapefruit X Tangelo.



Ortanique Tangor –
Tangerine X Orange



Cocktail Grapefruit –
Pummelo X Mandarin



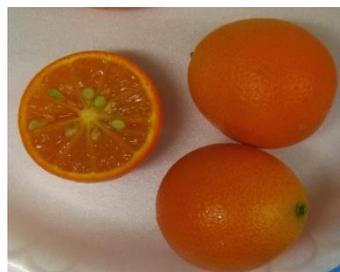
Eustis Limequat – Kumquat X Lime



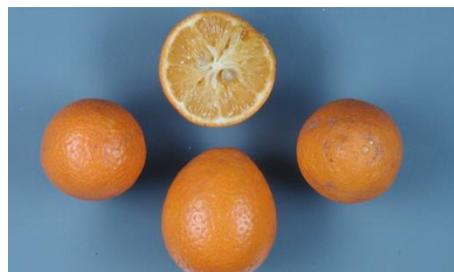
Rio Grande Valley Lemonquat – Kumquat
X Lemon



Indio Mandarinquat -
Mandarin X Kumquat



Nippon Orangequat –
Mandarin X Kumquat



Thomasville Citrangequat - Kumquat
X Sweet Orange X Trfoliate Orange



Improved Meyer Lemon –
Lemon X Orange

AUSTRALIAN FINGER LIME

Microcitrus australasica



- A tough, thorny, small tree with small leaves and a delicate habit.
- Commercial use of finger lime fruit started in the mid-1990s.
- The globular Juice vesicles referred to as "caviar lime", can be used as a garnish or added to various recipes. The fresh vesicles have the effect of a burst of effervescent tangy flavor as they are chewed.
- The fruit juice is acidic and similar to that of a lime.
- Finger lime is thought to have the widest range of color variation within any *Citrus* species. Color variants of finger lime fruit, including green, yellow, orange, red, purple, black and brown.



SMITH RED VALENCIA ORANGE

Citrus sinensis

- 1st released in 2004, the fruit is of good size and flavor and is very low-seeded.
- The rind frequently carries a heavy red blush and the flesh is heavily pigmented with anthocyanin.
- Although the fruit is mature in late winter, it holds well into late spring, well past the season for conventional blood oranges.



What is a rare fruit?

A fruit is considered to be rare fruit because it is not normally grown in a particular area.

(The Jaboticaba is a rare fruit tree in California, but not in Brazil, an Apple may be rare in the tropics but not in North America, Citrus may be rare in areas with freezing weather but not in areas that are relatively frost free.)

KAFFIR LIME *Citrus hystrix*

- Tree is small and shrubby with distinctive leaves that have a petiole almost as large and wide as the leaf blade.
- Fruit matures in late winter to early spring.
- In some places the fruit is used to make a shampoo that is insect repelling.
- The pungent leaves and not the fruit is commonly used in Thai and Indonesian cooking.
- Leaves of Kaffir Lime that have been imported to California for seasoning have been found to be infected with Citrus Canker Virus.



POHA (CAPE GOOSEBERRY)

Physalis peruviana



- An herbaceous tender perennial related to tomato. Hardy to 28 degrees.
- Grows in full sun or partial shade.
- The fruit is a berry with smooth, waxy, orange-yellow skin and juicy pulp containing numerous very small yellowish seeds. As the fruits ripen, they begin to drop to the ground, but will continue to mature and change from green to the golden-yellow of the mature fruit.
- The ripe fruit can be eaten out of hand or used in salads and cooked dishes. The fruit make a good preserve and jam product and also dries into tasty "raisins".
- Rich in vitamin A, C, and some B vitamins. Also high in protein and phosphorous.
- Fruit can be stored for up to 3 months!

PEPINO DULCE Solanum muricatum

- An herbaceous perennial, related to tomato, eggplant and peppers. The plant will survive a low temperature of 27 to 28° F. for brief periods, but may lose many of its leaves.
- It is not well suited for hot, interior gardens where spider mites are a frequent pest.
- Fruit is produced throughout the warm summer and autumn months.
- The fruit are 2 to 6 inches long. The skin is typically yellow or purplish green, often with numerous darker streaks or stripes. The flesh is greenish to white and yellowish-orange.
- Better quality fruit is moderately sweet, refreshing and juicy with a taste and aroma similar to a combination of cantaloupe and honeydew melon.



BANANA *Musa acuminata* & hybrids

- The 4th largest fruit crop of the world, they are fast-growing herbaceous perennials arising from underground rhizomes.
- The fleshy stalks or “trees” (pseudostems) are formed by upright concentric layers of leaf sheaths.
- Can survive temperatures of 26-28° F for short periods. The leaves will be killed by temperatures below 32 degrees, however if the temperature does not fall below 22° F and the cold period is short, the underground rhizome will usually survive.
- Plants enjoy heavy fertilizing and watering during the warm months of the year. Discontinue both during the colder months of winter.
- Rhizomes produce new pseudostems, called suckers or pups, forming vigorous clumps. At least 4-6 pups should remain with the ‘mother’ plant to anchor it and to help produce food for the clump.
- Pups can be removed when they reach 2-3 feet tall and should not be taken until a clump has At least 3-4 pups.
- When the pup is taken the cut must be into the mother plant’s rhizome enough to obtain some roots. These can be planted to form new clumps.



BANANA *Musa acuminata* & hybrids



- Each pseudostem fruits only once in it's life and then dies.
- Plants need 10 - 15 months of frost-free conditions to produce a flower stalk. Flowers are produced after the final leaves are formed (somewhere between 38-45) and can occur any time of year.
- The first flowers formed are female and develop into fruit. After the last "hand" of fruit are formed, Male flowers occur on the lower portion of the fruit stem. The male flowers should be cut off.
- All edible bananas are sterile.
- Over 80 varieties available. Mature pseudostems range from 6-20 feet in height.
- Fruit higher in starch are often used in cooking are referred to as plantains. Varieties higher in sugars are often eaten fresh and are referred to as dessert bananas. Fruit can be green, yellow, blue, red or variegated in color and can range in size from four to twenty four inches long. Flavor varies depending on variety.



MANGO *Mangifera indica*



- The mango is the apple (or peach) of the tropics, and is one of the most commonly eaten fruits in tropical countries around the world.
- An evergreen tree, with sufficient heat it the mango is fast growing to 60 feet in the tropics but will reach only 25-35 feet in California.
- Young trees may be seriously damaged if the temperature drops below 30° F, but mature trees may withstand very short periods of temperatures as low as 26° F.
- Mango trees love heat. In cooler areas plant against a south wall, or in an area surrounded by paving, to provide maximum heat.
- The mango must have warm, dry weather to set fruit. In southern California the best locations are in the foothills, away from immediate marine influence.
- New foliage is a beautiful wine red in color

- Both the new foliage and the flowers and young fruit are affected by powdery mildew. Some varieties are more resistant.
- Fungicide treatments are often necessary to insure fruit production in coastal climates.

MANGO *Mangifera indica*

- Fruit ripen in June from January bloom in interior California, and October from April bloom on the coast.
- The fruits are 2 to 9 inches long and may be kidney shaped, ovate or (rarely) round. They range in size from 8 ounces to around 24 ounces.
- The leathery skin contains a sap that is irritating to some people.
- The quality of the fruit is based on the scarcity of fiber and minimal turpentine taste.



- The flesh of a mango is peach like and juicy, with more or less numerous fibers radiating from the husk of the single large kidney-shaped seed.
- Grafted trees bear fruit when very small. It is best to remove fruit after they have set when trees are small.
- **Many varieties are available. Select varieties with proven track records for your area.**



PINEAPPLE *Ananas comosus*

- A terrestrial bromeliad, each plant produces only one fruit and then dies.
- Offshoots or “pups” are produced by the mother plant to produce a spreading clump of pineapple plants.
- Plants grow well in containers or raised beds. Plant in full sun.
- Pineapple plants are frost sensitive and should be protected from freezing temperatures.
- Ripe pineapples are golden yellow and wonderfully fragrant.
- Many varieties and cultivars.



PINEAPPLE

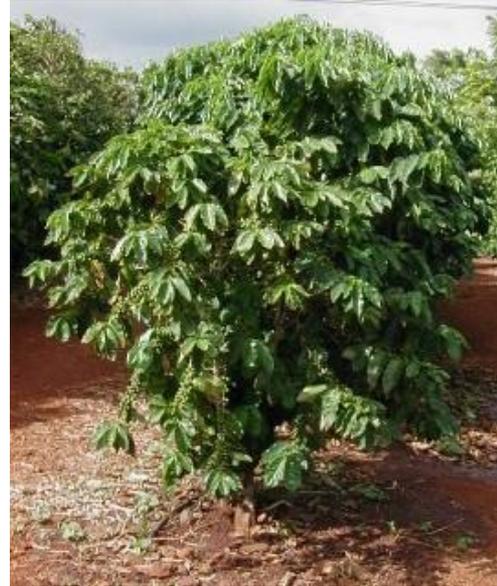
Ananas comosus

- New plants can be started from the pineapple pups or from a pineapple top.
- Cut the top off of a pineapple about a half inch below the bottom leaves. Trim excess fruit away and remove some of the lower leaves. Then allow it to dry out on the counter for a week or two. Otherwise the fruit still on there will cause it to rot.
- Plant top in fast draining potting soil, water the pineapple regularly and put in a sunny location. In one to three months roots will form and new leaves will begin to appear.
- Water and fertilize pineapple plants with liquid fertilizers through the “cups” in the leaves. Allow the roots to stay fairly dry, especially during the cooler winter months.



COFFEE *Coffea arabica*

- Shrub or small tree to 15 feet. Cold hardy to approximately 28 degrees F.
- Plant in full sun or partial shade.
- Flowers are fragrant.
- Bears 3 or more crops per year.
- Berries are sweet, pleasant in flavor and high in caffeine.
- Beans are dried, roasted and ground to make the beverage coffee.



PAPAYA *Carica papaya*

- A short-lived, fast-growing, woody, herbaceous trees, 6 to 20 feet in mature height.
- Brief exposure to 32° F is damaging and prolonged cold will kill the plants. Cold, wet soil is almost always lethal. Cool temperatures will also alter fruit flavor.
- Papayas like to be warm with both sunshine and reflected heat. The hottest place against the house or south facing wall is an ideal location.
- They are best planted in mounds or in a raised bed where water can be controlled.
- The soil needs to be moist in hot weather and dry in cold weather. In addition to good drainage, plastic coverings to prevent over-wetting in winter may be advisable.



- Seedling papayas usually begin flowering 9 – 12 months after they germinate.
- Trees may be dioecious or monoecious. Papaya trees may even change sex.

Female Flowers

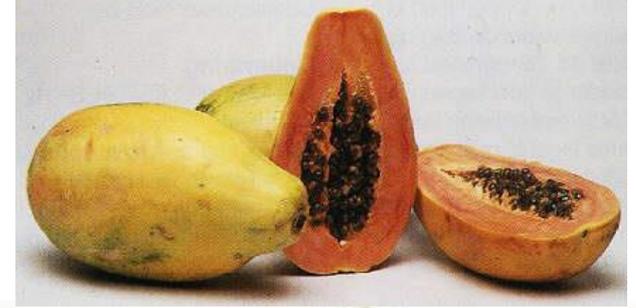


Male Flowers



PAPAYA

Carica papaya



- The fruit (and leaves) contain papain which helps digestion and is used to tenderize meat.

- Many varieties, with Mexican and Hawaiian types being the most common.
- Hawaiian varieties are the papayas commonly found in supermarkets. These pear-shaped fruit generally weigh about 1 pound and have yellow skin when ripe. The flesh is bright orange or pinkish.
- Mexican papayas are much larger. Fruit may weigh up to 10 pounds and be more than 15 inches long. The flesh may be yellow, orange or pink. The flavor is less intense than that the Hawaiian papaya.
- The Mexican papayas are slightly easier to grow than Hawaiian papayas.
- The edible seeds have a spicy flavor somewhat reminiscent of black pepper.



BABACO PAPAYA *Carica pentagona*

- A dwarf, cold hardy, self-fruitful papaya. The babaco is much more tolerant of cool, damp winters than other papaya. It will withstand temperatures to about 28° F, although it may lose most of its leaves. It is ideally suited to container culture.
- Female plants are parthenocarpic and produce seedless fruit without pollinization.
- Fruit frequently falls from the tree while still partially green in color and should be left at room temperature until completely yellow to develop it's best flavor. The smooth, thin skin is edible.
- Fruit has a perfume-like fragrance, is very juicy and has the taste of a honeydew melon with lemon-lime. The fruit is sweet-tart in flavor, delicious chilled and eaten fresh or used to make juice, sorbets and ice cream.



LOQUAT *Eriobotrya japonica*

- Native to southeastern China, it was introduced into Japan where it has been cultivated for over 1,000 years.
- A large evergreen shrub or small tree 20 to 30 ft.
- Well established trees can tolerate a low temperature of 12° F.
- The killing temperature for the flower bud is about 19° F, and for the mature flower about 26° F. At 25° F the seed is killed, causing the fruit to fall.
- Extreme summer heat is also detrimental to the crop, and dry, hot winds cause leaf scorch. High heat and sunlight during the winter often result in sunburned fruit.
- The trees are drought tolerant and are susceptible to the disease Fire Blight.
- Some varieties require a pollinizer to produce fruit.



- Fruit are 1 to 2 inches long with a smooth or downy, yellow or orange, sometimes red-blushed skin.
- The succulent, tangy flesh is white, yellow or orange and sweet to subacid in flavor. Each fruit contains three to five large seeds.
- Thinning of flowers and young fruits by clipping off all or part of the flower and fruit clusters will enhance fruit size.

PRICKLY PEAR (TUNA)

Opuntia ficus-indica



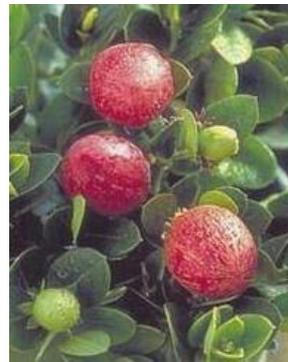
- Grown primarily as a fruit crop, but also for the vegetable nopales and other uses.
- Both cactus pads and fruit may have many spines or may be nearly spineless. The fruit have glochids, tiny but irritating spines that cover the fruit.
- Plants flower in white, yellow, orange and red.
- Fruit is produced in late summer. The fruit's skin color ranges from pale green to deep red. The bright red/purple or white/yellowish flesh contains many tiny hard seeds and has a taste similar to sweet watermelon.
- The fruit can be eaten fresh or the fruit is blended and then strained to produce a juice which is used in ice cream, jelly, jam, syrup, barbecue sauce, candy, and juices.



NATAL PLUM

Carissa macrocarpa & *C. grandiflora*

- A hardy, evergreen shrub, mature plants can survive temperatures into the mid to low 20's F.
- The plant has moderate drought tolerance and high resistance to alkaline soil, soil salinity and salt spray.
- Plants may reach a height of 15 -18 ft, have abundant white, gummy sap, and the branches are armed thorns to 2 in long. (Dwarf varieties are available.)
- Very tolerant of pruning or shaping. Pruning the plant is beneficial because it induces the development of more fruiting tips.
- Peak period for blooming and fruiting is May through September. In moderate, coastal areas the flowers and fruit can appear throughout the year.
- Snowy white flowers have a sweet perfumed scent which intensifies at night.
- The 2-2 ½ inch long fruit is rich in latex when unripe.
- Ripe fruit have tender, smooth skin bright magenta-red then finally dark-crimson in color. The flesh is tender, very juicy, strawberry-colored and cranberry-flavored, with flecks of milky sap.
- The fruit can be eaten out of hand or made into pies, jams, jellies, and sauces



STRAWBERRY GUAVA

Psidium cattleianum & *P. cattleianum lucidum*

- An evergreen shrub or small tree with new foliage that is copper-red in color. Tolerant of heavy pruning and shaping it is cold hardy to the low 20's F.



- Small white flowers are attractive and abundant.
- Fruit can be dark red or yellow. Yellow varieties are sometimes called lemon guavas.
- Fruit have hard seeds and are either eaten fresh or are made into fruit pastes, jams or jellies.
- Often more than 1 crop of fruit are produced each year.

TROPICAL GUAVA

Psidium guajava

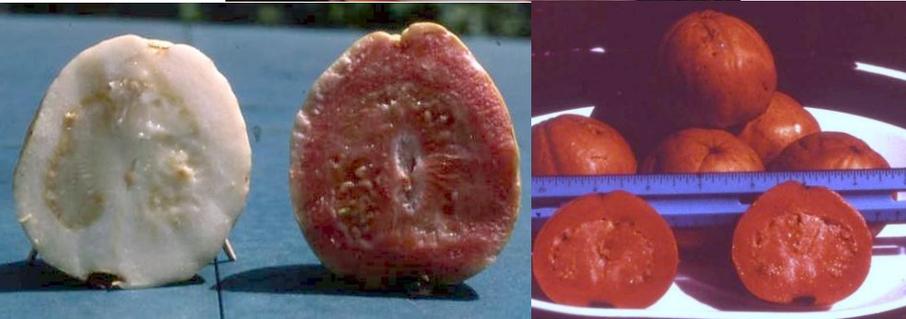
- Moderately fast growing evergreen trees or large shrubs to 25 feet in height. Frost hardy for brief periods to 26 degrees F.
- Many varieties and cultivars. Most have new foliage which is bronzed and becomes dark green. Foliage becomes reddish in winter.
- Most varieties have white flowers and fruit that is green when immature, turning yellow or yellowish green when ripe. (Sometimes with a reddish blush.)
- Varieties of 'Thai Maroon' Guava have reddish green foliage that becomes dark red in winter. The flowers are pink. The immature fruit is reddish bronze in color and becomes dark red when ripe. (These are dessert type guavas.)
- The fruit season is Fall – Spring.



TROPICAL GUAVA *Psidium guajava*

Tropical Guavas can be separated into two distinct categories:

- Dessert type tropical guavas have fruit that is eaten soft and creamy when ripe. Ripe fruit has a strong fragrance.
- Fruit can be 2-4 inches in diameter and the color of the flesh is white, pink or red flesh.
- Fruit are eaten fresh or are used to make jams, jellies, juice, fruit leathers, guava paste or ice cream and sorbet.
- “Vietnamese” or crunchy types of tropical guava have fruit that are eaten crisp like an apple and do not become soft and creamy when ripe.
- Fruit are much larger than other types of tropical guava. Up to 6” or more.
- Fruit have no fragrance or odor, are greenish-yellow when ripe and always have a flesh color that is white.



PINEAPPLE GUAVA (FEIJOA) *Acca sellowiana*

- A shrub or small tree to 20 to 25 ft. tall. Plants prefer cool winters and moderate summers (80° to 90° F). Mature plants are cold hardy to about 15° F.
- Plants are very tolerant of severe pruning



- Flowering occurs in May and June. The beautiful flowers have edible petals.
- Some varieties require a pollinizer to set fruit. Superior varieties have been developed for fruit quality and fruit size.
- Fruit fall to the ground when ripe in late summer or fall. The fruit flesh is scooped out of the rind, is very juicy and has a flavor of pineapple mixed with pear.
- Mature fruit can be stored in the refrigerator for about a week, but after that the quality declines. Fruit are mainly eaten fresh as a dessert or in salads, but can also be cooked in puddings, pies, etc.



PASSION FRUIT *Passiflora* species

- The passion fruit is a vigorous evergreen or deciduous climbing vine which are generally short-lived (5 to 7 years).
- Perhaps 40 or more *Passiflora* have fruit we would judge as edible, of those 10 or so may be grown as food crops. **Several species and cultivars require cross-pollination.**

Fragrant Granadilla (*Passiflora alata*)

Red Granadilla (*P. coccinea*)



Maypop (*P. incarnata*)

Yellow Granadilla (*P. Laurifolia*)



Sweet Granadilla (*P. ligularis*)

Sweet Calabash (*P. maliformis*)



Giant Granadilla (*P. quadrangularis*).



PASSION FRUIT *Passiflora species*



PURPLE PASSION FRUIT *Passiflora edulis* and *Passiflora edulis* X *flavocarpa* **'Frederick'**

- Considered the best fruiting passion fruit for Southern California, the fruit has a tough rind that is smooth and waxy. Within the cavity is an aromatic mass of membranous sacs containing tart-sweet pulpy juice and many small, hard seeds.
- These passion fruit are not affected by caterpillars and are more cold hardy than the other passion fruit. They will tolerate brief periods of 26-28 degrees F.
- The fruit is often sweeter when the outer rind is shriveled. The unique flavor is appealing, musky, guava-like and sweet/tart to tart. Both the fruit and the juice freeze well.



BANANA PASSION FRUIT *P. tripartita* var. *mollissima* and *P. tarminiana* (*P. mollissima*).

- Not as esteemed as the purple passion fruit, the orange pulp is edible and very tasty.



CHERIMOYA *Annona cherimola*



- A fast growing deciduous tree to 25 feet which is briefly dormant in March or April. Cold hardy to approximately 25 degrees F.
- Plants require some humidity for best fruit production and do not produce well in very dry climates.
- Fruit ripen December to May.
- Considered by many to be one of the worlds best-tasting fruit. Mature fruit are generally picked mature but hard and allowed to soften off of the tree. Fruit do not last well once they are soft ripe and often develop poor flavor if over ripe.
- All cherimoya have the potential for self fruit set, however much has to do with climate and maturity of the tree as well as pruning style. There are no truly self-fruitful varieties of cherimoya.
- Hand pollinate flowers to insure fruit production.



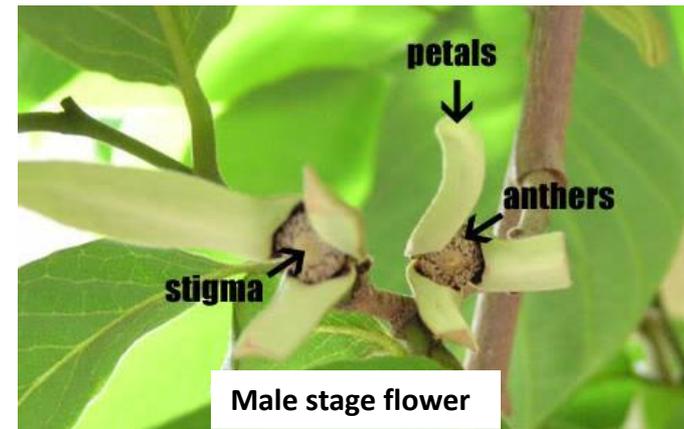
CHERIMOYA *Annona cherimola*



- Flowering occurs May-July and are sweetly fragrant.
- Each cherimoya flowers lives for approximately 36 hours. When first open, the female portion of the flower is receptive but the male portion has not yet opened to shed pollen.
- By mid-day the flower is changing from a female stage to a male stage and the stigmas of the female flower are drying out and are no longer receptive to being fertilized.
- By late afternoon and into the next morning the flower functions as a male flower and sheds pollen.
- **Although some self fruit set often occurs, hand pollinate flowers to insure fruit production.**
- Collect flowers in the male stage in the afternoon.
- Place flowers in a container covered with moist paper towel and leave them at room temperature overnight.
- The next morning, use a small paint brush to transfer pollen from the flowers collected the night before to the flowers which have just open and are in the female stage.



Female stage flower



Male stage flower

DRAGON FRUIT (PITAHAYA)

Hylocereus undatus, H. polyrhizus, and other species and hybrids of Hylocereus

- A moderately fast growing climbing cactus from the subtropical regions of Mexico and South America.
- Cold hardy for brief periods to the mid 20's F.
- Although plants prefer partial shade in hot areas, full sun is better for fruit production.
- A trellis, fence or other support system is required. Trials are still underway to determine the best training and pruning system for fruit production.
- 2-3 waves of spectacular 8"- 12" wide, white flowers are produced during the warm summer months.
- Individual flowers are open for only 1 night and each wave of flowers lasts for 2-3 weeks.



DRAGON FRUIT (PITAHAYA)

Hylocereus undatus, H. Polyrhizus, and other species and hybrids of Hylocereus



- Beautiful hot pink, ½ - 1 lb sized fruit ripens about 1 month after flowering.



- The fruit has white, pink or red colored flesh, a smooth texture, and a sweet and pleasant, mild flavor. Darker colored fruit have higher antioxidant value.
- The outer rind of the fruit is not eaten.



- Many varieties are self-sterile and require cross-pollination to produce fruit.
- Newer varieties that are being selected and released are self-fruitful.



YELLOW DRAGON FRUIT

Selenicereus megalanthus



- Closely related to Hylocereus, the yellow dragon fruit is also a moderately fast growing climbing cactus from the subtropical regions of South America.
- The *Selenicereus megalanthus* differs from the *Hylocereus* in color, harvesting time, and this fruit has thorns that occur on the fruit itself. The thorns fall off as the fruit matures and are easily brushed away from the ripe fruit.
- The fruit are small to medium usually weighing 0.5-0.75 lbs. with higher levels of sugar than other Dragon Fruit making it sweeter in flavor.
- Plants are self-fruitful.

DRAGON EGG (PITAYA)

Cereus peruvianus

- A branching, columnar cactus with moderate growth rate. Height 10 to 15 feet.
- The variety 'monstrosus' is smaller, bluish in color with ribs irregularly broken up into knobs and crests.
- Spectacular 5"- 6" white flowers open at night in late spring or summer. Flowering may last for several weeks.
- Flowers remain open until mid-day on cool or overcast days. Each flower only lasts 1 day.
- Fruit is sweet, pleasant and mild in flavor but somewhat grainy in texture.
- The white inner pulp has tiny black seeds. The outer pink-red rind is not eaten.



WHITE SAPOTE *Casimiroa edulis*

- Large evergreen trees to 60 feet. Grafted trees are smaller and can be kept to 12-15 feet with pruning.
- Fairly drought tolerant once established. Cold hardy to about 22 degrees F.
- Grafted varieties are self-fruitful and very productive.



- Fruit averages 3 to 6 inches in diameter and has thin yellowish-green or yellow skin when ripe. The flesh is yellow or pale yellowish-white. Each fruit has 2-4 large seeds.
- Ripe fruit is soft, creamy and sugary sweet with a flavor reminiscent of peach or banana, although sometimes with a hint of bitterness. The skin is sometimes bitter.



SAPODILLA (CHICO SAPOTE)

Manilkara zapota

- An evergreen tree (12-25 feet), rich in a white, gummy latex. Chicle, the latex obtained from the bark of the tree has been used as a chewing gum base for many years.
- Native to parts of southern Mexico and mature trees can withstand temperatures of 26° to 28° F for several hours.
- The fruit is 2 – 4 inches in diameter. The flesh varies from yellow to shades of brown and sometimes reddish-brown, and may be smooth or of a granular texture. The flavor is sweet and pleasant, ranging from a pear flavor to crunchy brown sugar.



BLACK SAPOTE *Diospyros digyna*



- An evergreen tree to 25 ft. Closely related to the persimmon. Cold Hardy to 26-28 degrees F. for brief periods.
- Trees may be dioecious or monoecious though some are self-incompatible.
- The bright-green, shiny unripe fruit is astringent, caustic, bitter, irritating and inedible.
- Fruit is mature when the skin becomes olive-green and then rather muddy-green. The fruit is picked hard then softens and goes brown within 3-6 days. When ripe, you should be able to press the skin with your fingers and leave an indent.
- The soft pulp is brown to very dark-brown in color and sweet and mild in flavor. The fruit has a flavor, color and texture often likened to chocolate pudding when ripe. There may be 1 to 10 seeds, but the fruits are often seedless.
- Known as Chocolate Pudding Fruit , it contains about 4 times as much Vitamin C as an orange.
- The fruit is delicious eaten fresh or used as a chocolate substitute in recipes and milkshakes or simply mix the pulp with yogurt and lemon juice. In Mexico the pulp is mashed with orange juice or brandy and served with cream.



LYCHEE

Litchi chinensis

- Elegant, slow growing, small to medium sized trees to 30 feet. The new growth is pinkish fading to light green, then finally to the dark green color of the mature foliage.
- Trees are sensitive to excess salt and wind. Mature trees have survived temperatures as low as 25° F when fully hardened off.
- A certain amount of winter chilling is necessary for flower bud development. Most varieties need between 100 and 200 hours of standard chilling (32° – 45° F).
- Fruit production is often unreliable, heavy some years and light other years. Fruit ripens in late summer.



LYCHEE *Litchi chinensis*

- The fruit is encased in a pink or red “leathery” outer shell. The shape is oval, heart-shaped or nearly round, 1 to 1 -1/2 inches in length.
- The edible portion or aril is white, translucent, firm and juicy. The flavor is sweet, fragrant and delicious.
- Inside the aril is a seed that varies considerably in size. The most desirable varieties contain atrophied seeds which are called “chicken tongue”.



LONGAN

Dimocarpus longan



- Related to and very similar in fruit to Lychee, the Longan is a fast growing, medium sized evergreen tree to approximately 35 feet. Longan are easier to grow and are more reliably fruitful than their Lychee cousin.
- Mature trees are cold hardy to 26 degrees.
- Fruit ripen in late summer to Fall. The fruit is surrounded in a thin, somewhat leathery, greenish-brown shell.
- The fruit is sweet and similar in aroma and flavor but slightly more crisp and not as juicy as the lychee. The fruit has a single medium to large seed.



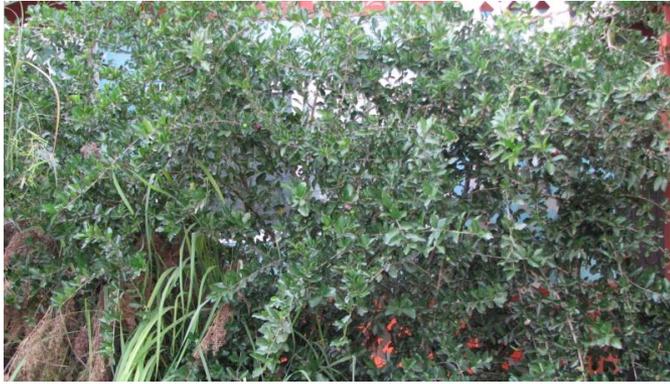
CARAMBOLA (STAR FRUIT)

Averrhoa carambola

- A small, evergreen tree, mature trees are cold hardy to brief periods of temperatures to about 27 degrees F.
- Lovely pink flowers are produced mid-summer from 2 year old and older branches.
- Some varieties do best with pollinators, other varieties are self-fruitful.
- Fruit ripen from late fall to early spring.
- Fruit are eaten skin and all, somewhat crunchy and watermelon-like in texture. Sweet-to sweet-tart in flavor.
- Highly prized in desserts and for fruit salads, fruit are sweeter when fully colored.



ACEROLA *Malpighia emarginata* (*M. glabra*, *M. puniceifolia*)



- A small tree, screen, hedge or espalier to 15 feet. Very tolerant of hard pruning.
- Can survive brief exposure to 28° F with loss of leaves.
- With good irrigation, acerola will flower all year, with between 1 and 3 flowering peaks. Up to 90% of flowers fall from tree, but “Blossom Set” can be used to counter this effect.
- 1” fruit is up to 40 times higher in vitamin C than an orange by weight. The pulp is juicy, acid to sub-acid in flavor.



SPLIT LEAF PHILODENDRON

Monstera deliciosa



- A climbing epiphyte with aerial roots, able to grow to 20 feet or more.
- It grows best between the temperatures of 50 –86 °F and prefers high humidity and shade.
- The latex of the leaves and vines can create rashes in the skin.
- The fruit first shows signs of ripening by its bottom most scales becoming yellowed.
- The fruit may be ripened by cutting it when the first scales begin to lift up and it begins to exude a pungent odor. It is wrapped in a paper bag and set aside until the scales begin popping off. The scales are then brushed off or fall away to reveal the edible flesh underneath.
- The flesh can be cut away from the core and eaten. It has a fruity taste similar to jackfruit and pineapple.
- The unripe green fruits contain needle-like structures of potassium oxalate which can irritate the mouth and throat. To prevent this, the fruits have to be eaten when the scales lift up.



JELLY PALM *Butia capitata*



- A small palm with slow to medium growth rate to 20'.
- The hardiest feather-leaved palm currently in wide cultivation, withstanding low temperatures of at least 15° F. It is moderately drought tolerant.
- Attractive flower spikes are produced in mid-late summer. Flowers are pink in color.
- Each spike produces hundreds of fruit that ripen approximately 1 month after flowering.
- The fruit has 1 large, hard seed and a sweet flavor that resembles the flavor of apricots and pineapple.
- The delicious fruit can be eaten fresh or used to make jam or jelly.



CHERRY OF THE RIO GRANDE

Eugenia aggregata

- An evergreen large shrub or small tree to 20-25 feet. Can be kept to as small as 6 feet with pruning.
- Cold hardy to approximately 20 degrees F.
- Established trees are fairly drought tolerant.
- Small white flowers are produced mid-spring. Fruit ripen approximately 30 days after flowering.
- Fruit are dark purple-black when fully ripe, have 1-3 seeds and have a sweet cherry-like flavor.
- Trees are self-fruitful and productive. There is some variation in fruit size and quality among seedlings.



GRUMICHAMA *Eugenia dombeyi* (*E. brasiliensis*)

- A shrub or small tree to approximately 15 feet. Can be kept to 6 feet or smaller with pruning.
- Cold hardy to 26 degrees F.
- Very ornamental, the new foliage is deep wine red in color and matures to a glossy dark green color.



- Abundant 1 inch white flowers occur in late spring. Occasionally a second flowering and fruiting will occur in late summer.
- Also known as the Brazilian Cherry, the dark purple-red 1 inch fruit is considered one of the best tasting of the Eugenia cherry-like fruits.



SURINAM CHERRY *Eugenia uniflora*



- An evergreen shrub or small tree to 25 feet, tolerant of heavy pruning.
- Well-established plants have suffered only superficial injury at 22° F.
- The Plants often bear several crops of fruit per year.
- Fruit are highly ornamental, very fragile and may be orange-red or dark purple-black in color when ripe.
- The fruit skin is thin, the flesh melting and very juicy; acid to sweet, with a touch of resin and slight bitterness. The fruit contains 1-3 seeds.



MALABAR CHESTNUT *Bombax glabra*

- A semi-deciduous small tree to 15 feet, the tree will develop an interesting swollen trunk.
- Plant in full sun or partial shade. Hardy to approximately 28 degrees F.
- Plants are often sold as “Money Trees”.



- Spectacular flowers occur Spring through Summer. Nut pods ripen in late Autumn.
- The nuts of the Malabar chestnut are harvested when the seed pods burst. The raw nuts taste like peanuts and will keep for months in a cool, dry place. Roasted or fried in oil they have the flavor of chestnuts, and can be ground into a flour for bread.



ROSE APPLE *Syzygium jambos*



- A large shrub or small tree to 20 feet with a semi-weeping growth habit. Easily trained as an espalier or pruned as an informal hedge or screen.
- New growth is a beautiful wine red.
- Creamy white flowers are quite showy and are produced throughout the summer.
- Pale green or yellowish fruit is the size of a ping pong ball and the edible portion of the fruit forms a hollow shell around the seeds.
- The New growth is a beautiful wine red.
- Creamy white flowers are quite showy and are produced throughout the summer.
- The fruit is eaten fresh or makes a wonderful jam or jelly.

WAX JAMBU

Syzygium javanicum

- Large shrub or small tree with beautiful new growth which fades to dark green as it matures.
- Frost sensitive. Should be protected from temperatures below 32 degrees.
- Flowers are yellowish-white and very showy.
- Fruit somewhat apple-shaped with mild, watery flavor and crisp texture. Fruit often has a white, pink or red skin color.



LINGARO *Elaeagnus philippinensis*

- An evergreen shrub or small tree to about ten feet with an arching habit and silvery leaves
- Lingaro is drought tolerant, cold hardy to the mid 20's F. and like many *Elaeagnus* species they harbor nitrogen fixing organisms in their roots.
- Edible shimmering red berries are produced in the fall are small and tart. Flavor is similar to currants.
- Excellent fresh, in a sauce or desert, or made into a jam or jelly. Fruit are a great source of lycopine.



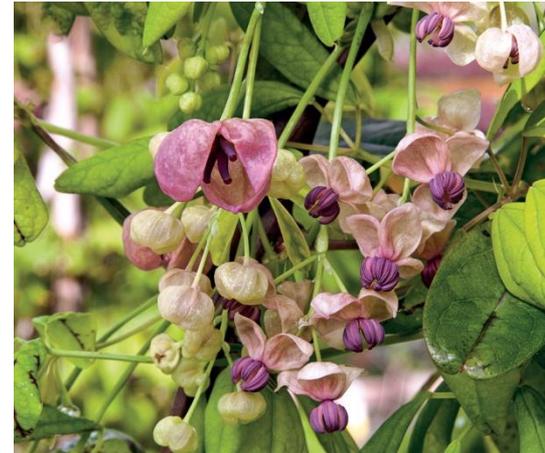
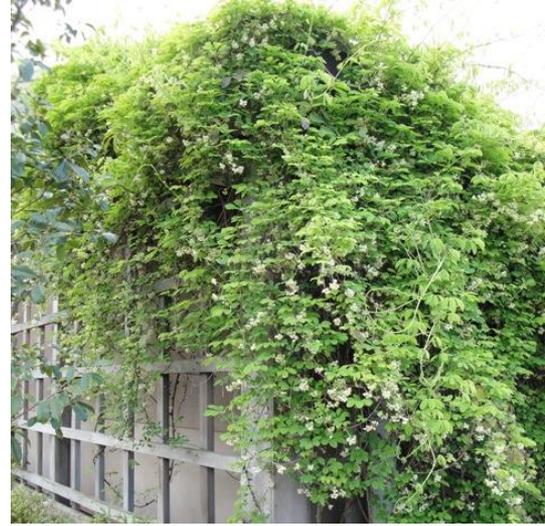
KEI APPLE *Dovyalis caffra*

- An evergreen large shrub or small tree to 15 feet in height and width. Plants have large, very sharp, woody spines. Plants are used as barriers in Africa to keep animals out of villages and farmland.
- Very drought tolerant, plants can survive brief drops in temperature to 20° F.
- Male and female flowers are on separate plants. Only the female plant produces fruit.
- Fruit are produced in late summer. The fruit are 1-2 inches in size, have a slightly fuzzy skin, and are tart-sweet in flavor.
- The fruit have a few small, edible seeds and are commonly used to make jams and jellies as well as eaten fresh.



CHOCOLATE VINE *Akebia Quinata*

- A twining shrub that grows to (30 ft) or more. Hardy to -25 degrees F. Plants can be invasive.
- Foliage is semi-evergreen in warm winter climates.
- Prefers full sun, but tolerates close to full shade.
- The flowers are chocolate-scented and occur mid-late spring . For best fruit production, plant more than one vine to facilitate good cross-pollination. Many experts recommend hand-pollination.
- In fall, sausage-shaped, violet fruit pods (to 4" long) split open to reveal small black seeds imbedded in a whitish pulp.
- The whitish gelatinous pulp is edible pulp with a sweet flavor and is delicious in jams and jellies.



JUJUBE

Ziziphus jujuba

- Originating in China where they have been cultivated for more than 4,000 years and where there are over 400 cultivars.
- An attractive deciduous small tree to approximately 25 feet.
- Hardy to a wide range of temperatures; virtually no temperature seems to be too high in summertime. Cold hardy to about -28° F.
- The fruit ripen in fall and change in color from green to brown. mahogany-red. Shortly after becoming fully red, the fruit begins to soften and wrinkle. Fruit can be eaten fresh or dried.
- Fresh fruit are crisp and sweet and resemble a small apple in texture and taste.
- The fruit dries easily and stores well when dried. Dried fruit becomes sweeter and resembles a dried date in texture and flavor.



CHE *Cudrania tricuspidata*

- Che is native to many parts of eastern Asia. It was introduced into the U.S. around 1930.
- A deciduous shrub or small tree to 25 feet tolerant of heavy pruning. Plant is tolerant of drought and poor soils similar to that of the related mulberry. It can withstand temperatures of -20° F.
- Plants are usually dioecious having male and female flowers on separate trees. Only the female tree produces fruit.
- The ripe fruits, 1 to 2 inches in diameter, have a juicy, rich red flesh. Inside are 3 to 6 small brown seeds.
- Fruit ripens for a month or more in fall. When fully soft ripe the fruit has a watermelon-like flavor that can be quite delicious. The sugar content is similar to that of a ripe fig.



GOJI BERRY (CHINESE WOLFBERRY)

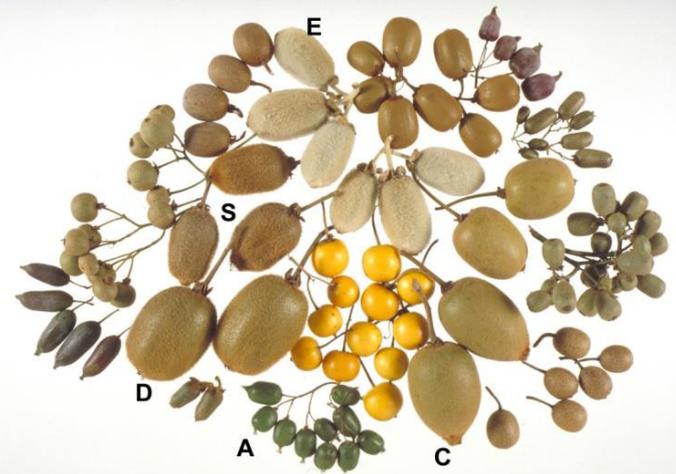
Lycium barbarum

- Un-wieldy deciduous shrubs 8-10' in height native to subtropical regions of Tibet and China. Plants spread by root suckers and can become invasive.
- Tolerant of heat and drought, established plants are cold hardy to -15 degrees F. Plants are very susceptible to powdery mildew.
- Self-pollinating. Flowering occurs from June through September and berry maturation from June to October.
- Where frost does not occur fruiting can be continuous and plants do not lose their leaves.
- Fresh berries have some of the highest concentration of antioxidants of any food in the world; 2 to 4 times as much as blueberries.
- They contain up to 21 trace minerals and are a complete protein source; they contain all 8 essential amino acids and 18 additional amino acids.
- Fresh berries have a sweet and mildly tangy taste. Dried berries have a raisin like chewy texture.



ACTINIDIA sp.

- There are 40–60 species of *Actinidia* native to temperate eastern Asia. Most of the species are dioecious with separate male and female plants, but some are monoecious (such as *A. arguta* var. 'Issai').
- The fruit is a large berry containing numerous small seeds.
- Most *Actinidia* are very vigorous vines that require a sturdy trellis system and proper pruning for good fruit production.
- Cold hardy to temperatures of 10°F. or lower.
- The main species in this genus that are grown for their fruit are *A. deliciosa* and *A. chinensis* (Kiwifruit) and *A. arguta* (the Hardy Kiwi).
- Plants need a long growing season which will not be hampered by late winter or early autumn freezes. (At least 240 frost-free days for Kiwifruit and about 150 frost-free days for the Hardy Kiwi.)





ACTINIDIA sp.

KIWIFRUIT

Actinidia delectiosa and *A. chinensis*

- Vines require a winter chilling period of an average of 350 hours to over 800 hours depending on the variety. Kiwifruit is not recommended for the hot desert climates of the Southwest.
- New Varieties of Yellow and Orange Fleshed Kiwifruit are becoming available.
- Green, yellow and orange fleshed varieties often do not bloom synchronously. Male and female plants of the same colored fruit are often required for pollination.



HARDY KIWI

Actinidia arguta

- Hardy kiwi prefer well-drained, somewhat acid (pH 5 - 6.5) soils. The plants will not tolerate salty soils.
- To date, all cultivars that have been grown in both high chill and low chill areas have produced equally well.
- Hardy kiwifruits are generally sweeter than regular kiwifruit and have a thin fuzz-less skin. The fruit can be eaten skin and all.



MULBERRY Morus nigra, M. alba, M. rubra and Hybrids

- Deciduous, fast growing trees reaching 30-70 feet in height or more. Tolerant of drought, pollution and poor soil, the root systems can be invasive and greedy.
- Cold hardiness varies with species and cultivar. Mature trees are generally cold hardy to at least 0° F.
- Berries can be eaten fresh or used in pies, tarts, puddings or sweetened and pureed as a sauce. They can also be made into wine and make an excellent dried fruit, especially the black varieties.

WHITE or RED MULBERRY

M. alba, M. rubra and Hybrids

- The largest trees, fruit can be white, lavender, red or very dark purple. Fruit color, size, flavor and season can vary by variety. Fruit generally ripen in spring – mid summer.
- There are many named varieties available. Sometimes insipidly sweet, the best clones have a flavor that almost equal to that of the Persian mulberry.

PERSIAN MULBERRY

Morus nigra

- A smaller, slower growing tree that reaches an average mature height of 25 feet.
- The fruit of Persian mulberries ripen in summer to late summer.
- The dark purple fruit are large and juicy, with a good balance of sweetness and tartness giving the fruit more of a boysenberry-like flavor. Many consider them the best flavored species of mulberry.



POMEGRANATE *Punica granatum*

- A single or multi-trunked shrub or small tree to 20 ft., branches are often spiny.
- Very drought tolerant, has a strong tendency to sucker from the base.
- Pomegranates prefer a semi-arid mild-temperate to subtropical climate. Best adapted to regions with cool winters and hot summers. A humid climate adversely affects the formation of fruit. Cold hardy to about 12° F.
- Beautiful scarlet, white or variegated flowers. Flowers are self-pollinated as well as cross-pollinated by insects.



POMEGRANATE *Punica granatum*



- Fruit from 3-6 inches or more in size, in colors from white or yellow to pink or dark red.
- Inside the fruit are sacs filled with sweetly acid, juicy, red, pink or whitish pulp or aril. In each sac there is one seed which may be soft and chewable or very hard.
- The flavor of the fruit ranges from very tart to pure sweet and many have sweet-tart or tart-sweet flavors. High temperatures are essential during the fruiting period to get the best flavor.
- The fruit is eaten by breaking it apart and lifting out the clusters of seeds and juice sacs. The tough outer skin and white inner membrane is not eaten. Pomegranate fruits are most often consumed as juice.
- The juice can be used as a fresh juice, or to make jellies, sorbets, cold or hot sauces, wine or as a flavoring for food. Pomegranate syrup is sold as grenadine.
- Over 90% of the pomegranates grown in this country are the single variety 'Wonderful' although many new varieties are becoming widely available.



ORIENTAL PERSIMMON

Diospyros kaki

- Native to China, more than two thousand different cultivars exist.
- Deciduous trees to 35 feet or less.
- Oriental persimmons do best in areas that have moderate winters and relatively mild summers. Under mild autumn conditions the leaves often turn dramatic shades of yellow, orange and red.
- Trees can tolerate temperatures of 0° F when fully dormant and do not produce well in the high summer heat of desert regions, where high temperatures may also sunburn the bark.
- Ripe fruit hold on the tree long after the tree has lost all of it's leaves.



ORIENTAL PERSIMMON *Diospyros kaki*

- The shape of the fruit varies by cultivar from spherical to acorn to flattened or squarish. The color of the fruit varies from light yellow-orange to dark orange-red. The size can be as little as a few ounces to more than a pound.

Persimmons can be classified into three categories:

- Those that bear **nonastringent** fruits which can be eaten when it is crisp as an apple (these cultivars need hot summers, and the fruit might retain some astringency when grown in cooler regions).
- Those that bear **astringent** fruit until they are soft ripe (these must be jelly soft before it is fit to eat and are best adapted to cooler regions).

Astringent persimmons will ripen off the tree if stored at room temperature. Freezing the fruit overnight and then thawing softens the fruit and also removes the astringency.
- Those whose fruits are influenced by pollination (**pollination variant**). **Pollination-variant** cultivars have dark flesh around the seeds when pollinated.
- **Pollination-variant nonastringent (PVNA)** fruit are edible when firm only if they have been pollinated.



FIG *Ficus carica*



- A deciduous tree 10 - 30 ft. Often grown as a multiple-branched shrub, tree size easily controlled with pruning. Roots are invasive and greedy. Cold hardy to 12° - 15° F.
- The bark is unusually sensitive to heat and sun damage, and should be whitewashed if exposed to full sun in hot climates.
- The sap contains copious milky latex that is irritating to human skin.
- Freezing weather may kill plants to the ground. Dormant buds are more susceptible to freezing than wood and freezing may also create a trunk without live buds. Sprouts from the roots result in trees that produce only the main crop on the current seasons growth.
- Figs grow best and produce the best quality fruit in dryer warm-temperate climates. Rains during fruit development and ripening can cause the fruits to split.
- Figs are capable of producing 2 crops of ‘fruit’. The first crop, **(the breba crop)** in the spring on last season's growth and a second crop in the fall on the new growth **(the main crop)**. In cold climates the breba crop is often destroyed by spring frosts.
- The “fruit” is actually a hollow-ended stem containing many flowers.

FIG

Ficus carica



- There are 4 types of fig: **The caprifig** which has male and female flowers and requires pollination by a tiny wasp; **The Smyrna-type fig** which requires cross-pollination by caprifigs in order to develop edible “fruit”; **The common fig** which needs no pollination and **The San Pedro fig** which its first crop needs no pollination and its second crop which is dependent on pollination.
- **Common-type figs** are by far the most prevalent fig grown.
- Unpollinated fruit does not have true seeds. Only pollinated fruit have true seeds which provide the characteristic nutty taste of dried figs.
- The skin of the fig “fruit” is thin and tender, the fleshy wall is whitish, pale-yellow, or amber, or more or less pink, rose, red or purple; juicy and sweet when ripe, gummy with latex when unripe.
- Figs must be allowed to ripen fully on the tree and will not ripen if picked when immature. A ripe fruit will be slightly soft, usually have small cracks in the skin and start to bend at the neck.
- Figs can be eaten fresh, used in jam-making or baking and some fig varieties are delicious when dried.
- Over 160 cultivars of common figs are in the University of California at Davis’s germplasm collection.

ELDERBERRY *Sambucus nigra*, *S. canadensis*, *S. caerulea*, *S. glauca*.

- The black-berried elder complex is variously treated as a group of several similar species or as several subspecies of *Sambucus nigra*.
- Deciduous somewhat sprawling, multi-stemmed shrubs or small trees growing to 20 ft. Cold hardy to -15 degrees F. or lower.
- A large number of smaller cultivars featuring purple foliage, variegated foliage, double flowers or berry colors other than black have become popular landscape plants. Plants spread by root suckers to form colonies.
- The flowers are in flat corymbs, Although plants are self-pollinating, fruit yields can be increased by planting more than one cultivar together.
- The flowers of the elderberry can be batter coated, fried and served as a dessert.

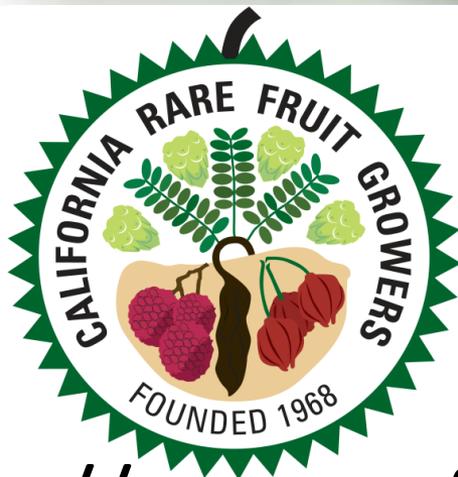


ELDERBERRY *Sambucus nigra, S. canadensis, S. caerulea, S. glauca.*

- The ripe, **cooked** berries (pulp and skin) of most species of *Sambucus* are edible. **However, most uncooked berries and other parts of plants from this genus are poisonous.** The leaves, twigs, branches, seeds and roots of *Sambucus* plants can contain a cyanide-inducing glycoside. Ingesting a sufficient quantity of cyanide-inducing glycosides can cause a toxic buildup of cyanide in the body.
- *Sambucus nigra* is the only variety considered to be non-toxic, **but it is still recommended that its berries be cooked slightly for culinary purposes.**
- Elderberries fruit are black to glaucous blue and are popular for their unusual taste in pies, jellies, and jams. They are occasionally used in winemaking.
- Black elderberry is used for its antioxidant activity, to lower cholesterol, to improve vision, to boost the immune system, to improve heart health and for coughs, colds, flu, bacterial and viral infections and tonsillitis. Bioflavonoids and other proteins in the juice destroy the ability of cold and flu viruses to infect a cell.



Rare Fruit for Climates with Relatively Frost Free Winters



<http://www.crfg.org>



Tom Del Hotal
(619) 454-2628

Specializing in Edibles

for over 30 years

- * Fruit Tree Pruning
- * Landscape and Orchard Consultations
- * Home Orchard Management
- * Seminars, Lectures & Classes

ISA Certified Arborist

CA State Qualified Pesticide Applicator

CA State Advanced Certified Nurseryman

email: fantasiagardens@gmail.com