Loquat Growing in the Florida Home Landscape[1]

Jonathan H. Crane and M. Lilia Caldeira[2]

Scientific Name: *Eriobotrya japonica* (Thunb.) Lindl.

Synonyms: *Crataegus bibas, Mespilus japonicus,* and *Photinia japonica*

Common Names: Japanese plum, Japanese medlar, nispero japones (Spanish), ameixa do Japao (Portuguese), luju (Chinese), lokwat (Maylay and Indonesian)

Family: Rosaceae

Relatives: apple, pear, peach, nectarine.

Origin: Native to southeastern and central China

Distribution: Loquat is grown in southern Japan, Taiwan, Europe, the Near, Middle, and Far East, North Africa, India, Australia, New Zealand, South Africa, the East Indies (at moderate altitudes), and North, Central, and South America.

History: Loquat has been cultivated in Asia for at least 1,000 years and was introduced into the US sometime before 1879 and into Florida before 1887.

Importance: Loquat is grown commercially throughout the subtropical and Mediterranean areas of the world. Small commercial acreage may be found in California.

Figure 1. Loquat fruit.
Credits: Ian Maguire, UF/IFAS

Description

Tree

Loquat trees are evergreen, have a short trunk, and may reach 20 to 35 ft in height. They have a rounded to upright canopy.

Leaves

Leaves' mostly in terminal whorls are elliptical-lanceolate to obovate-lanceolate, 12 to 30 cm long and 3 to 10 cm wide. They are dark green and glossy on the upper surface, whitish to rusty-tomentose on the lower surface.

1. This document is HS5, one of a series of the Horticultural Sciences Department, UF/IFAS Extension. Original publication date January 1980. Revised October 2005 and November 2016. Reviewed December 2019. Visit the EDIS website at https://edis.ifas.ufl.edu for the currently supported version of this publication.

2. Jonathan H. Crane, professor and tropical fruit crop specialist; and M.Lilia Caldeira, former horticulturist; UF/IFAS Tropical Research and Education Center, Homestead, FL 33031.

Inflorescence (Flowers)

Flowers are borne on 10 to 20 cm long terminal panicles of 30 to 100 or more flowers. Individual flowers are 1.25 to 2 cm in diameter, have 5 white petals, about 20 stamens, and an inferior ovary.

Fruit

Fruit are pomes, held in clusters of 4 to 30, oval to rounded to pear-shaped, 2 to 5 cm long and weigh an average of 30 to 40 g; some cultivars up to 70 g. The peel is smooth to slightly downy, light yellow to orange. The pulp is white to light yellow to orange, 6.7 to 17°Brix, sweet to sub acid, and juicy. There may be 1 to 10 dark brown seeds.

Pollination

Loquat trees are pollinated by various insects including bees (*Apis* sp.), syrphids, houseflies, *Myrmeleontidae*, *Bombinae*, and *Pieris rapae* (L.). Although they are considered self-compatible, cross pollination by another cultivar, seedling, or selection improves fruit set, size, and production.

Varieties

There are numerous loquat varieties in Florida and the US, but many cannot be found in the nursery trade. Loquat varieties have a range of peel and pulp colors as well as flavors. You may want to ask your local nursery if they can obtain a desired cultivar (Table 1). The Tropical Research and Education Center has budwood available for nurseries to use in propagation of 14 varieties of loquat.

Climate

Loquats may be found growing from 20° to 35°N and are best adapted to subtropical and warm temperate climates. Loquat is a subtropical evergreen fruit tree that blooms in the fall and early winter and is harvested during the spring. The environmental factor or factors responsible for flower induction are not known, although a cessation of growth prior to the fall/winter flowering is essential.

The optimum climate appears to be where trees stop vegetative growth during the early fall, perhaps due to cool temperatures and/or dry soil conditions. This is followed by continued cool but non-freezing temperatures during the winter, and warming temperatures during the spring. In some areas, loquat trees grow well but the bloom or developing fruit are damaged or killed by winter or spring frosts.

Loquat trees are very cold tolerant and may withstand temperatures down to 8° to 10°F. However, the flowers and fruit are killed by temperatures below 27°F. Temperatures above 95°F may negatively affect loquat tree growth.

Propagation

Loquat trees may be propagated by seed, but they do not come true from seed and they have a 6- to 8-year juvenile period before flowering and fruiting. Loquat seeds may remain viable for up to six months of storage at high RH and 41°F or cleaned and planted immediately. Loquat may be cleft, veneer, and whip grafted or chip, patch, or shield budded. Propagation by cuttings and marcottage is also possible but more difficult. Vegetatively propagated trees generally begin bearing 1 to 2 years after planting. Mature planted trees may be stumped and top-worked to desirable cultivars. Loquat trees may be propagated by tissue culture (somatic embryos), microcuttings, and by micropropagation using terminal or axillary shoots; however, these methods are not common in the US.

Commonly trees are grafted onto loquat seedlings, occasionally on *Eriobotrya deflexa*, and *Photinia serrulata*, and may be grafted onto dwarfing rootstocks of quince (*Cydonia oblonga* Mill.) and pyracantha (*Pyracantha* spp.).

Production (Crop Yields)

Mature loquat trees may yield from 35 to 300 lbs per year depending upon tree size and care. Usually less sound fruit is produced due to infestation with Caribbean fruit fly larvae.

Spacing

Loquat trees left unpruned may grow moderately large and should be planted 25 to 30 ft or more away from structures, electrical lines, and other trees for best production. Trees that are pruned to limit their size may be planted slightly closer. Trees planted too close to other trees or structures may not grow normally or produce much fruit due to shading.

Soils

Loquat trees grow well in a range of well-drained soils, from fertile loamy soils to clay to gravelly limestone-based soils. Loquat trees are not tolerant of flooded soil conditions.

Planting a Loquat Tree

Proper planting is one of the most important steps in successfully establishing and growing a strong, productive loquat tree. The first step is to choose a healthy nursery tree. Commonly, nursery loquat trees are grown in 3-gallon containers and trees stand 2 to 4 ft from the soil media. Large trees in smaller containers should be avoided because the root system may be "root bound", which means that all the available space in the container has been filled with roots to the point that the tap root is growing along the edge of the container in a circular fashion. Root-bound root systems may not grow properly once they are planted in the ground.

Inspect the tree for insect pests and diseases and inspect the trunk of the tree for wounds and constrictions. Select a healthy tree and water it regularly in preparation for planting in the ground.

Site Selection

In general, loquat trees should be planted in full sun for best growth and fruit production. Select a part of the landscape away from other trees, buildings and structures, and power lines. Remember loquat trees may become moderately large if not pruned to contain their size. In areas where there is a chance of spring frost, select the warmest area of the landscape. In locations where this is not a concern loquat may be planted anywhere in the landscape. Loquat trees should be planted in areas that do not flood (or remain wet) after typical summer rainfall events.

Planting in Sandy Soil

Many areas in Florida have sandy soil. Remove a 3 to 10 ft diameter ring of grass sod. Dig a hole 3 to 4 times the diameter and 3 times as deep as the container the loquat tree came in. Making a large hole loosens the soil next to the new tree making it easy for the roots to expand into the adjacent soil. It is not necessary to apply fertilizer, topsoil, or compost to the hole. In fact, placing topsoil or compost in the hole first and then planting on top of it is not desirable. If you wish to add topsoil or compost to the native soil, mix it with the excavated soil in no more than a 50-50 ratio.

Backfill the hole with some of the excavated soil. Remove the tree from the container and place it in the hole so that the top of the soil media from the container is level with or slightly above the surrounding soil level. Fill soil in around the tree roots and tamp slightly to remove air pockets. Immediately water the soil around the tree and tree roots.

Staking the tree with a wooden or bamboo stake is optional, but, do not use wire or nylon rope to tie the tree to the stake since they may eventually damage the tree trunk as it grows. Use a cotton or natural fiber string that will degrade slowly.

Planting in Rockland Soil

Many areas in Miami-Dade County have a very shallow soil, and several inches below the soil surface is a hard, calcareous bedrock. Remove a 3- to 10-ft-diameter ring of grass sod. Make a hole 3 to 4 times the diameter and 3 times as deep as the container the loquat tree came in. To dig a hole, use a pick and digging bar to break up the rock or contract with a company that has augering equipment or a backhoe. Plant the tree as described in the previous section.

Planting on a Mound

Many areas in Florida are within 7 ft or so of the water table and experience occasional flooding after heavy rains. To improve plant survival, consider planting fruit trees on a 2 to 3 ft high by 4 to 10 ft diameter mound of native soil.

After the mound is made, dig a hole 3 to 4 times the diameter and 3 times as deep as the container the laquat tree came in. In areas where the bedrock nearly comes to the surface (rockland soil), follow the recommendations for the previous section. In areas with sandy soil, follow the recommendations from the section on planting in sandy soil.

Care of Loquat Trees in the Home Landscape

A calendar outlining the month-to-month cultural practices for loquat is shown in Table 2.

Fertilizer

A month after planting, spread 1/4 lb (113 g) per tree of a young-tree fertilizer, such as 6-6-6 (6 % nitrogen 6% phosphate 6%potassium) with minor elements. Twenty to 30% of the nitrogen should come from organic sources (Table 3). Repeat this every 8 weeks for the first year. Then, gradually increase the amount of fertilizer to 0.5, 0.75, 1.0 lb etc., (227 g, 341 g, 454 g, etc.) as the trees grow. Four to 6 dry fertilizer applications per year may be made up to the third year.

A foliar fertilizer mix composed of magnesium and minor nutrients (manganese, zinc, boron, and molybdenum) may be applied 2 to 3 times per tree per year any time from April

to November. In acid to neutral soils, apply iron sulfate at 0.25 to 1 oz per tree to the soil 2 to 3 times per year. In alkaline soils with a high pH, drench the soil with iron chelate 2 to 3 times per year from June through September. To make a soil drench, mix 0.5 to 0.75 oz (14–21 g) of iron chelate with 4 to 5 gallons (14–19 liters) of water and pour onto the soil next to the tree trunk.

For mature trees, fertilize trees 2 to 3 times per year. The fertilizer should be applied just before or at bloom, perhaps during late fall, again in March, and once during the summer. The fertilizer mix should also include phosphate (P_2O_5) and potash (K_2O); use a 6-6-6, 8-3-9 or similar material.

Irrigation (Watering)

Newly planted loquat trees should be watered at planting and every other day for the first week or so and then 1 to 2 times a week for the first couple of months. For the first 3 years, water once a week during prolonged dry periods (e.g., 5 or more days of little to no rainfall). Once the rainy season arrives, reduce or stop watering.

Once loquat trees are 4 or more years old, water them during the fruit development period and during prolonged dry periods. Over watering may cause trees to decline or be unthrifty.

Insect Pests

Loquat fruit are attacked by the Caribbean fruit fly (*Anastrepha suspensa*) and some caterpillars. Protect fruit from the Caribbean fruit fly by paper bagging the entire fruiting panicle. Leaf and stem pests include various scales, aphids, beetles, weevils, caterpillars, and nematodes. Please contact your county extension agent for current control recommendations for loquat pest.

Diseases

Numerous fungal pathogens attack loquat. The major disease in Florida is called fire blight (*Erwinia amylovora*), it kills branches and trees in the US. Treatment of fire blight includes removal (pruning) and disposal of affected branches and application of fungicides. Excessive nitrogen applications increase the susceptibility of loquat trees to fire blight. Many other minor diseases have been reported to attack, loquat including *Pythophthora* (crown rot), *Psuedomonas eriobtoryae* (cankers), scab, *Diplodia natalensis* (collar and root rot), and *Colletotrichum gloeosporioides* (anthracnose).

Loquat Trees and Lawn Care

Loquat trees in the home landscape are susceptible to trunk injury caused by lawn mowers and weed eaters. Maintain a grass-free area 2 to 5 or more feet away from the trunk of the tree. Never hit the tree trunk with lawn mowing equipment, and never use a weed eater near the tree trunk. Mechanical damage to the trunk of the tree will weaken the tree and if severe enough can dieback or kill the tree.

Roots of mature loquat trees spread beyond the drip-line of the tree canopy. Heavy fertilization of the lawn next to loquat trees is not recommended because it may reduce fruiting and or fruit quality. The use of lawn sprinkler systems on a timer may result in over- or under-watering and cause loquat trees to decline. Too much water applied too often causes root rot. Water applied for an insufficient time will not penetrate beyond the roots of the grass.

Mulch

Mulching loquat trees in the home landscape helps retain soil moisture, reduces weed problems next to the tree trunk, and improves the soil near the surface. Mulch with a 2- to 6-inch layer (5- to15-cm) of bark, wood chips, or similar mulch material. Keep the mulch 8 to 12 inches (20–30 cm) from the trunk.

Pruning

Tree Size Control. During the first 1 to 2 years after planting, prune young trees by tipping shoots in excess of 2 to 3 ft, tipping will increase branching. Trees may be trained to a modified central leader or open center configuration. Mature trees may be selectively pruned to maintain trees at 6 to 12 ft in height. This will make care of the tree and harvest easier.

Fruit Thinning. To improve fruit size, you may wish to hand-thin flowers or fruit. Allow anywhere from 4 to 10 fruits to develop per terminal. Thinning will increase fruit size from 25%–100%. In areas with insects and or bird fruit pests, bag the fruit clusters. Bagging also hastens fruit development and reduces fruit scaring.

Harvest, Ripening, and Storage

Loquat season in Florida is during the late winter and spring (February through May). Fruit color development increases and firmness decreases during the last 4 to 5 weeks of development. Loquat fruit should be picked at nearly full to full color development. Tasting a few fruit before to harvest will indicate which color fruit are harvestable. Depending upon the variety, peel color when

ready to pick may be yellow to pale orange to dark orange (Table 1). Harvesting is by hand. Cut clusters of fruit from terminal branches and then clip individual fruit from the cluster. Ripe loquat fruit may be stored in plastic bags in the refrigerator for several weeks.

Uses and Nutritional Value

Loquat may be eaten fresh without the peel, combined with other fruits in fruit salads, used as a pie filling, and made into sauces and gelatin desserts, jams, and jellies. Fruit may also be canned, dried, frozen, and made into syrup. Loquat fruit are a good source of vitamins and minerals (Table 4).

Table 1. Loquat cultivars in Florida.

Variety	Harvest Season[1]	Fruit Size[2]	Fruit Wt (Grams)[3]	Fruit Shape	Peel Color[4]	Pulp Color[4]	Fruit Flavor	No. of seeds	Peel Thickness	Rec.[5]
Advance	M	M–L	15–17	pear	Y	W	sweet-tart	1–2	thin	Y
Champagne	M–L	M–L	14–24	pear	PY–PO	W–LY	sweet, spicy flavor	2	thin	Y
Emanuel	M	M–L	13–16	pear	DY–O	DY–O	mildy sweet, good flavor	2–3	thin	Y
FCN#3	E, M, L	S–M	10–15	pear	O	DY–O	sweet	1–3	thick	Y
Gold Nugget	M–L	M–L	17–18	round	O	O	mildly sweet, fair flavor	3–6	thick	N
Golitch	M	M–L	14–18	round	O	O	mildly sweet, fair flavor	2–4	thick	Y
Juda	M–L	M–L	11–15	pear	PO	DY–PO	sweet, mildly tart, good flavor	2–4	thin	Y
Judith	M	S–M	10–21	pear	DY–O	DY–O	mild, sweet	1–3	thick	Y
MOG20126	M–L	M	16–19	pear	O	O	mildly sweet, good flavor	1–3	thin	Y
Oliver	M–L	M–L	14–15	pear	O	PO	very sweet, good flavor	1–2	thick	Y
Seedling #1	M–L	M–L	13–14	pear	PY–DY	W	sweet, good flavor	1–2	thick	Y
Seedling #2	M–L	M–L	18–19	pear	Y-O	DY	sweet, very good flavor	1–2	thick	Y
Seedling #3	M–L	M	14–17	pear	O	O	mildly sweet, good flavor	2	thick	Y
SES #1	M–L	M–L	21–22	pear	Y	W	sweet, apple-like, good flavor	1–2	thin	Y
SES #2	M	M–L	16–17	pear	PY	PY–DY	sweet, good flavor	2–3	thin	Y
Sherry	M–L	M–L	25–29	pear	Y	W–PY	mildly sweet, fair to good flavor	1–3	thick	
Tananka (Florida)	M–L	S	5–6	round	DY	DY–PO	mildly sweet, fair flavor	2–4	thin	N
Thales	E, M, L	S–M	9–11	pear	DY–O	Y–O	sweet, good flavor	1–2	thin	Y
Thursby	M–L	S–M	14–15	pear	DY–O	DY	mildly sweet-tart, good flavor	2–3	thick	Y
Wolfe	M–L	L	14–15	pear	LY–Y	W–PO	sweet-tart, spicy good flavor	1–2	thin	Y

[1] E, Feb.-March; M, March-April; L, April-May.
[2] S, small; M, medium; L, large.
[3] 1 ounce equals about 28 grams.
[4] Y, yellow; W, white; LY, light yellow; DY, dark yellow; O, orange; PY, pale yellow; PO, pale orange.
[5] Recommendation for planting in the home landscape; Y, yes; N, no.

Table 2. Cultural calendar for loquat production of mature (bearing) trees in the home landscape.

Operation	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
General Fertilizer[1]			Administer 2–3 dry applications of a nitrogen-phosphate-potash-magnesium material during this time. Do not apply any nitrogen-containing fertilizer after August since this may induce the tree to continue to grow during the winter and therefore reduce flowering in the spring.									
Nutritional Sprays[2]				Apply 2–3 foliar nutritional sprays containing magnesium, manganese, zinc, molybdenum, and boron. Sprays are most effective during warmer parts of the year. Avoid spraying fruit near harvest.								
Iron Applications[3]			Administer 1–2 iron applications to the soil around the base of the tree. Iron applications are most effective during the warm part of the year.									
Watering	Water periodically (once a week at most).				Do not water the tree unless a severe and prolonged drought occurs.						Water periodically.	
Insect Control	Monitor tree leaves and stems for insect infestations, identify the pest, and treat only severe infestations.										Bag fruiting panicles to avoid fruit fly infestation.	
Disease Control	Monitor trees for fire blight. Selectively prune out dead or dying wood and remove it from the landscape.											
Pruning						Selectively prune trees to control tree size and open up the canopy to light and wind.						

[1] Use a 6-6-6-3, 8-3-9-3, 4-2-12-2 or similar material.
[2] Follow label directions for dilution of dry and liquid micronutrient formulations.
[3] In low-pH, acid, sandy soils, apply iron sulfate; in high-pH, rockland soils, apply chelated iron.

Table 3. Suggested fertilizer recommendations for loquats for Florida.

Year	Times per year	Amount/tree /application (lbs)[1]	Total amount/tree/ year (lbs)	Minor element sprays (times/ year)[2]	Iron chelate drenches (oz/ tree/year)[3]
1	2–3	0.25–0.5	0.5–1.5	2–3	0.5–0.75
2	2–3	0.5–1.0	1.0–3.0	2–3	0.75–1.0
3	2–3	1.0–1.5	2.0–4.5	2–3	1.0–1.5
4	2–3	1.5–2.0	3.0–6.0	2–3	1.5–2
5	2–3	2.0–2.5	4.0–5.0	2–3	2–4
6	2–3	2.5–3.0	5.0–9.0	2–3	2–4
7+	2–3	3.0–3.5	6.0–10.5	2–3	2–4

[1] Use 6-6-6, 8-3-9, or a young-tree or slow-release fertilizer.
[2] The spray should contain zinc, manganese, boron, and molybdenum; it may also contain iron. Foliar sprays are most efficient from April to September.
[3] Iron chelate soil drenches (iron plus water) will prevent iron deficiency; foliar sprays are generally not effective. Apply soil drenches from June to September.

Table 4. Nutrient value of loquat fruit (3.5 oz or 100 g of fruit).[z]

Constituent	Approximate Value
Water Content	87%
Calories	47 kcal
Protein	0.4 g
Fat	0.2 g
Cholesterol	0 mg
Carbohydrate	12.0 g
Total Dietary Fiber	1.7 g
Calcium	16 mg
Iron	0.3 mg
Magnesium	13 mg
Phosphorus	27 mg
Potassium	266 mg
Sodium	1 mg
Vitamin C	1 mg
Vitamin A	1528 IU

[z] Data source, USDA-ARS,Nutrient Data Laboratory, Database for Standard Reference, Release 18 http://www.nal.usda.gov/fnic/foodcomp/ .