

The Orange

Kingdom.....Plantae

Class.....Magnoliopsida

Order.....Sapindales

Family.....Rutaceae

Genus.....*Citrus*

Species.....*Citrus sinensis*

Varieties

- 1) Washington Navel
- 2) Trovita
- 3) Valencia*
- 4) Lue Gim Gong
- 5) Rhode Red Valencia
- 6) Hamlin*
- 7) Homosassa
- 8) Shamouti
- 9) Parson Brown
- 10) Pineapple
- 11) Queen
- 12) Blood Oranges

Valencia

This is one of the most important cultivars in California and Florida.

It was introduced into Florida in 1870, and later to California in 1876.

It was not propagated for sale in California until 1916 and was slow to be adopted commercially.

It needs a warm climate and nearly seedless.

It bears 2 crops a year, overlapping and giving it the great advantage of a late and long season lasting until midsummer.

Hamlin

Discovered in 1879 in Florida.

It is small, smooth, not highly colored, and seedless.

The fruit is poor-to-medium quality but the tree is high-yielding and cold-tolerant.

The fruit is harvested from October to December.

Origin and Distribution

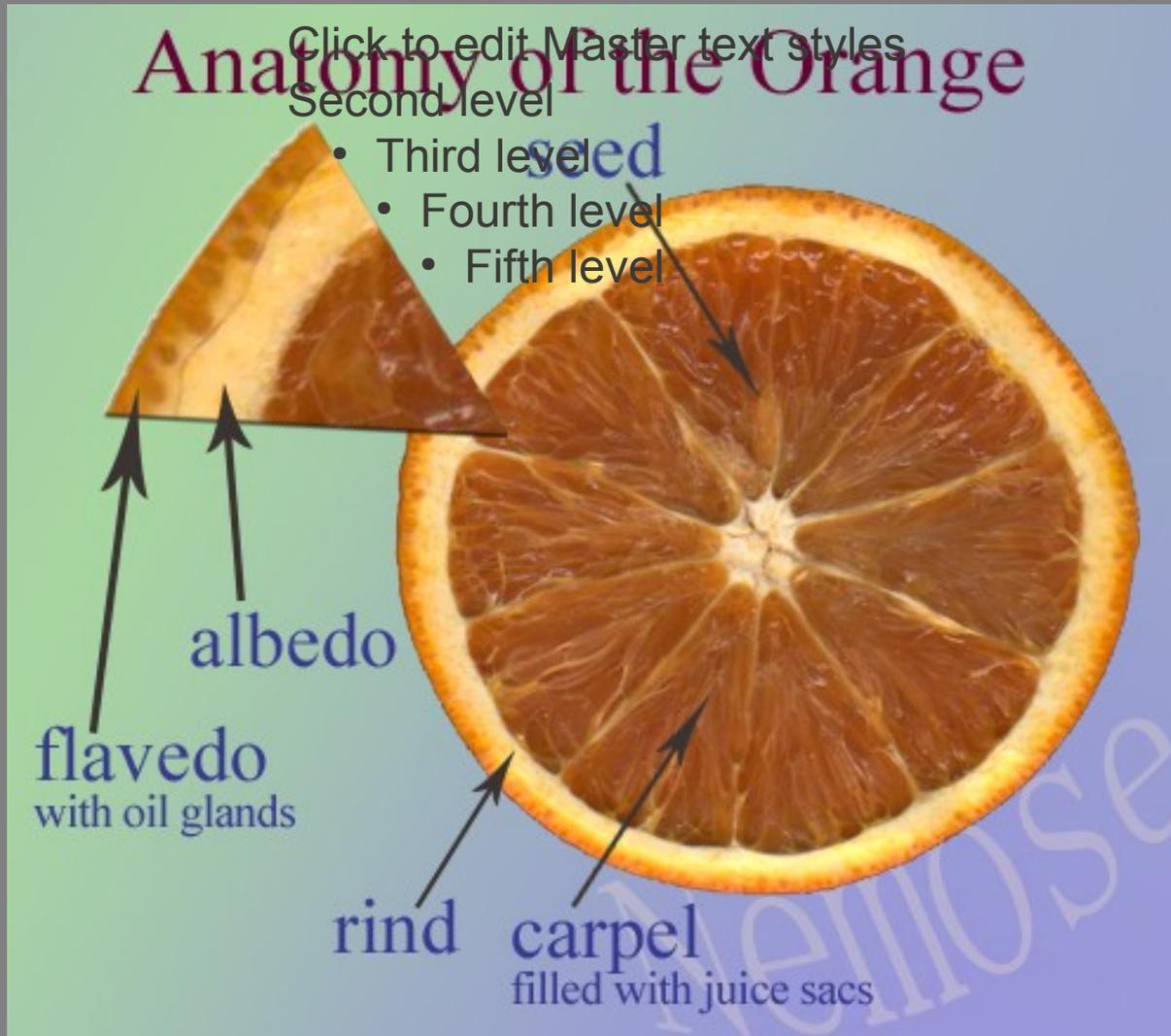
The Orange is unknown in the wild state.

Is assumed to have originated in southern China and northeaster India.

Carried to the Mediterranean possibly by Italian traders after 1450, or by Portuguese navigators around 1500.

Spaniards introduced the orange into South America and Mexico in the mid 1500's, and the French introduced it in the United States.

Morphology



Climate

The orange is sub-tropical, not tropical.

During the growing period, the temperatures should range from 55 to 100 degree's Fahrenheit.

In the winter dormancy, ideal temperature range is 35 to 55 degree's Fahrenheit.

The fruit is damaged between 26-30 degree's Fahrenheit.

Favorable annual precipitation varies from 5 to 20 inches.

Soil

The best soil for orange-growing in Florida is known as Lakeland fine sand.

There must be adequate depth for good root development. Shallow soils of high-water content is avoided.

In California the best soils for orange groves are deep loams.

Propagation

While the Orange will often come true from the seed, the common means of assuring the reproduction of cultivars of known quality is by budding onto appropriate rootstocks.

Although seedling trees were more vigorous and productive, budding trees were less thorny and matured uniformly.

The sweet orange rootstocks were originally used for budding trees, but they were susceptible to “foot rot.”

Propagation

Sour orange rootstocks replaced the sweet orange, because they were resistant to “foot rot.”

However, in 1952 a disease known as Tristeza forced orange growers to move to the Cleopatra mandarin rootstocks, which has smaller stocks, lower yields, and the acidity of the fruit is higher.

In the 1980s, the Sour Orange was reinstated, because Tristeza has been more or less dormant since the 1940s.

Irrigation

Irrigation of orange trees is carefully managed.

Ordinarily, it is omitted in the fall in order to avoid the production of tender new growth that would be damaged in winter cold spells.

It may be very desirable in the spring dry season to prevent wilting.

The deeper the soil, the better the root system and the greater the ability to withstand drought.

Harvesting

In the early days of the orange industry, harvesters climbed ladders and pulled the fruits off by hand.

From 1900 to 1940, they used clippers.

Various methods of wholly or partially mechanized harvesting have been explored, including limb and tree shakers and air jets.

Manual picking is less laborious now that oranges for processing can be allowed to fall on the ground.

Yield

It is said that very old, large orange trees in the Mediterranean area may bear 3,000 to 5,000 oranges each year.

In Australia, 'Valencia' orange trees 6 years old, planted 1,011 to 2,023 trees per acre. Productivity in this crop began to decline after the 4th generation.

Keeping Quality

Oranges can be stored for 3 months at 52 degrees Fahrenheit; up to 5 months at 36 degrees Fahrenheit.

Detioration in market quality is primarily due to transpiration-loss of moisture in the peel and the pulp.

Coating the fruits with a polyethylene/wax emulsion double the storage life.

Food Uses

In the past, oranges were primarily eaten fresh, out-of-hand.

In home, oranges are commonly peeled, segmented and utilized in fruit cups, salads, gelatins and numerous other desserts, and as garnishes on cakes, meats and poultry dishes

In the past few decades, the commercial extractions of orange juice and its marketing in waxed cartons or cans has become a major industry, though now surpassed on a grand scale by the production of frozen orange concentrate to be diluted with water and served as juice.

Food Uses

Dehydrated orange juice, developed in 1963, is sold for use in food manufacturing, adding flavor, color and nutritive elements to bakery goods and many other products. Whole oranges are sliced, dried and pulverized, and the powder is added to baked goods as flavoring.

Orange slices and orange peel are candied as confections. Grated peel is much used as a flavoring and the essential oil, expressed from the outer layer of the peel, is employed commercially as a food, soft-drink and candy flavor and for other purposes.

Toxicity

Persons in close proximity to orange trees in bloom may have adverse respiratory reactions.

Excessive contact with the volatile oils in orange peel can produce dermatitis.

People who suck oranges often suffer skin irritation around the mouth.

Those who peel quantities of oranges may have rash and blisters between the fingers.

Medicinal Uses

Oranges are eaten to reduce fevers.

The roasted pulp is used for skin diseases.

The fresh peel can be rubbed on Acne.

The immature fruit is taken to relieve stomach and intestinal complaints.

Orange flower water, made in Italy and France as a cologne, is bitter and considered antispasmodic and sedative.

A vinous decoction of husked orange seeds is prescribed for urinary ailments in China and the juice fresh orange leaves can be applied to sores and ulcers.

An orange seed extract is given as a treatment for malaria in

Nutrition

Nutrition Facts

Serving Size: Medium Orange (131g)

Amount Per Serving
Calories 62

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0g	0%
Sodium 0mg	0%
Total Carbohydrate 15g	5%
Dietary Fiber 3g	13%
Sugars 12g	
Protein 1g	

Vitamin A 6% * Vitamin C 116%
Calcium 5% * Iron 1%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

The End

Any Questions?

References

Morton, J. 1987. Orange. p. 134–142. In: Fruits of warm climates. Julia F. Morton, Miami, FL. <http://www.hort.purdue.edu/newcrop/morton/orange.html>
<http://www.geochembio.com/biology/organisms/citrus/>