

Hovenia dulcis

Thunb

Rhamnaceae

LOCAL NAMES

English (raisin tree, Japanese raisin tree)

BOTANIC DESCRIPTION

The raisin tree is a medium-sized deciduous tree which can grow to a height of 21 m or more, but cultivated specimens typically reach a height of about 9-11 m with a singular trunk and a rounded head. The lower branches frequently drop off leaving a fairly high crotch. Growth rate is moderate, perhaps a foot or two per year, more when young and less when old. Raisin trees are particularly handsome when planted in groups.

Leaves simple, cordate, pubescent, alternate, deciduous with serrate margins and an uneven leaf base and is glossy dark green in summer. Fall color is a mixture of yellow. The leaves are 10-15 cm long; rather limp leaf which must be spread out to see its shape. In autumn, the leaves have no fall color.

Flower borne in 5- 8 cm long racemes of many small self-fruitlet flowers of about 2.5 cm diameter. The flowers are showy, creamy or white blooming in mid summer and compensate for their small size by being clustered together in great masses. Flowers are slightly fragrant.

Fruit a fleshy, reddish-brown drupe, about 1.3 cm diameter and about the size of a raisin, hence the name. They are sweet, and can be eaten. The edible "raisins" are not a fruit at all but a short, swollen mature flower stalk or peduncle which supports the inedible seed pod. As the pod matures, the peduncle of stem attaching it to the cluster swells becomes knobby and turns translucent reddish brown. A pear-like flavor develops as the sugars increase, and the peduncle is ready to eat when it falls to the ground. Although the edible portions are small, close to the size of a raisin, the crop is copious. The brown pod which is actually the fruit is not used.

Bark smooth, gray on young trees. On older trees it is a light gray, slightly furrowed (ridged), peeling in strips to reveal darker brown tones underneath.

BIOLOGY

The white flowers bloom in mid summer i.e. between June and July and the fruit drupes mature in September. Where summers are cool, bloom may be delayed even until the end of summer with the result that fruit does not form or ripen. Plants grown from seed usually bear fruit within 7-10 years, though bearing within 3 years is possible under good conditions.



Bark (©J.S. Peterson. USDA NRCS NPDC. USDA ARS National Arboretum, Washington, DC)



Flower (©J.S. Peterson. USDA NRCS NPDC. USDA ARS National Arboretum, Washington, DC)



Flowers and leaves (©J.S. Peterson. USDA NRCS NPDC. USDA ARS National Arboretum, Washington, DC.)

ECOLOGY

Raisin tree is an adaptable plant tolerant of many soil conditions but not wet soil. It prefers full sun to partially shaded sites and well-drained soils. Full sun helps hasten flowering and ripening. It tolerates wind, but not wet conditions. Its hardiness is a problem in colder areas, and it is particularly sensitive to rapid temperature changes. Although very durable, die-back often occurs in colder areas after severe winters. It also prefers woodlands.

BIOPHYSICAL LIMITS

Altitude: up to 2000m

Temperature: It is cold-hardy to about -42 C

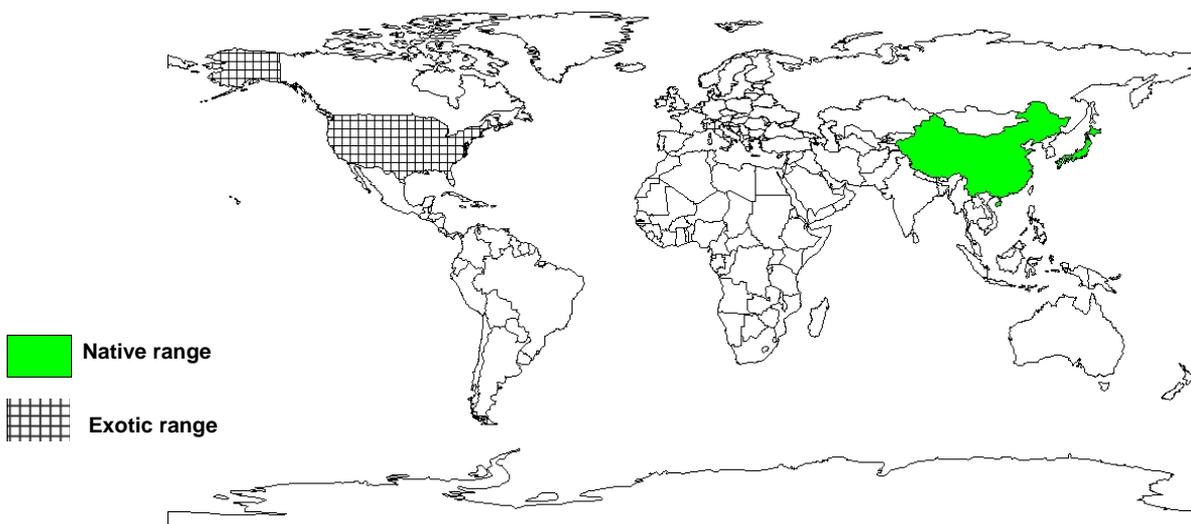
Rainfall:

Soil type: Seems to tolerate a wide range of soil conditions, pH, and exposures but thrives in sandy loam.

DOCUMENTED SPECIES DISTRIBUTION

Native: China, Japan, Korea, Republic of

Exotic: Italy, US



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS

Food: The fruit can be eaten raw or cooked. Raisin tree peduncles do not become tasty until very late in the season. The fruit is sweet and fragrant with a pear-like flavour. They are excellent to eat out of hand or may be used in anything where raisins are normally used. The fruit contains 11.4% glucose, 4.7% fructose and 12.6% sucrose. The bonus with raisin tree "raisins" is that they don't have to be dried.

A sweet extract of the seed, boughs and young leaves is used as a substitute for honey. The seed contains 15% protein and 7.8% fat. They are chopped and added to fruitcake in Australia, and in China they are made into a beverage called "tree honey" that is said to neutralize hangovers.

Medicinal: The fruit is antispasmodic, febrifuge, laxative and diuretic. The seeds are diuretic and are used in the treatment of alcohol overdose. The seeds are used to relieve intoxication due to wine. The stem bark is used in the treatment of rectal diseases.

SERVICES

Ornamental: Raisin tree could be used in planters. A lot of information is not known on the uses of this tree. Raisin tree could make a nice tree for the residential landscape, parking lots, shade tree and as specimen plants.

TREE MANAGEMENT

Although somewhat tolerant of drought, raisin trees do best with a regular supply of moisture. Little is known about the fertilization needs of the tree, but a light to moderate fertilizing in mid-spring is probably useful. The tree tends to prune itself, dropping the lower branches as the tree grows.

GERMPLASM MANAGEMENT

Seed requires acid scarification. The seeds have an impermeable seed coat that severely inhibits germination. Several methods have been employed to get around the problem. The seed coat can be scarified by nicking it with a file, or soaking the seed in concentrated sulfuric acid for two hours. Following the acid soak, the seed should be washed thoroughly with water. The seed can also be soaked in hot tap water (approximately 108° C) for three consecutive days. Others have had some luck with freezing the seed. The seed can maintain its viability for several years in hermetic air-dry storage at 5°C. 25% germination can be attained after 6 years of storage at 40% relative humidity at 4°C. After treatment, the seeds are planted in potting soil, covered with clear plastic wrap and placed in bright light. Seeds should germinate within a week to a month or more.

PESTS AND DISEASES

Raisin trees are apparently free of any significant pests and diseases. Deer will probably browse the foliage, but the roots do not seem to be attractive to gophers.

FURTHER READNG

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SUGGESTED CITATION

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestry Database:a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/af/treedb/>)