

## Arbutus unedo

L.

Ericaceae

### LOCAL NAMES

English (cane apples, arbutus, strawberry tree); Greek (koumaria)

### BOTANIC DESCRIPTION

*Arbutus unedo* is an evergreen broadleaved shrub or small tree with a spreading habit, up to 12 m high, often much lower; rarely exceeding 2.5-3.7 m in the southeastern USA.

Leaves simple, alternate, serrate, obovate, oblanceolate, pinnate, evergreen, 5 - 10 cm long, borne on 5mm long hairy pinkish stalks. The leathery leaves are glossy on top with red vein when young.

Flowers hermaphrodite, bell-shaped small white or pinkish blueberry-like assembled in drooping panicles about 5 cm long and 8 mm in diameter with a soft honey scent.

Fruit globose berries, covered in conical swellings, ripening through yellow to scarlet and deep crimson with mealy, edible pulp and about 2 cm in diameter; looks somewhat like strawberries though the resemblance does not apply to taste.

Bark gray-brown; fissured, flaking and peeling in thin plates to reveal the reddish young bark beneath.

Strawberry tree has a long taproot and therefore should not be transplanted once established, but thanks to that taproot it eventually becomes extremely drought hardy.

The Latin name 'unedo' means 'I eat one (only)' and suggests that the fruit is not very palatable, though it also suggests the fruit is so delicious that a person only needs to eat one.

### BIOLOGY

Strawberry flowers are hermaphrodite, self-fertile and pollinated by bees. It begins blooming in autumn and continues into the winter. The fruit takes 9-12 months to ripen hence both mature fruit and flowers are existent at the same time with an incredible beauty.



Flowers and leaves (©J.S. Peterson. USDA NRCS NPDC. Strybing Arboretum, Golden Gate Park, San Francisco, CA.)



bark (©J.S. Peterson. USDA NRCS NPDC. Strybing Arboretum, Golden Gate Park, San Francisco, CA.)

**ECOLOGY**

*Arbutus unedo* does best in mild, wet winter climates, with dry, warm-hot summers and is found growing in woodland margins, scrub and rocky slopes, generally on well-drained acid soils, often on limestone and sandstone. It prefers full sun to partial shade and thrives along with laurel, cork oak, juniper and other plants of the maquis.

**BIOPHYSICAL LIMITS**

Altitude: 0-4000 m.

Temperature: average 13-19°C and can tolerate temperatures down to -16°C.

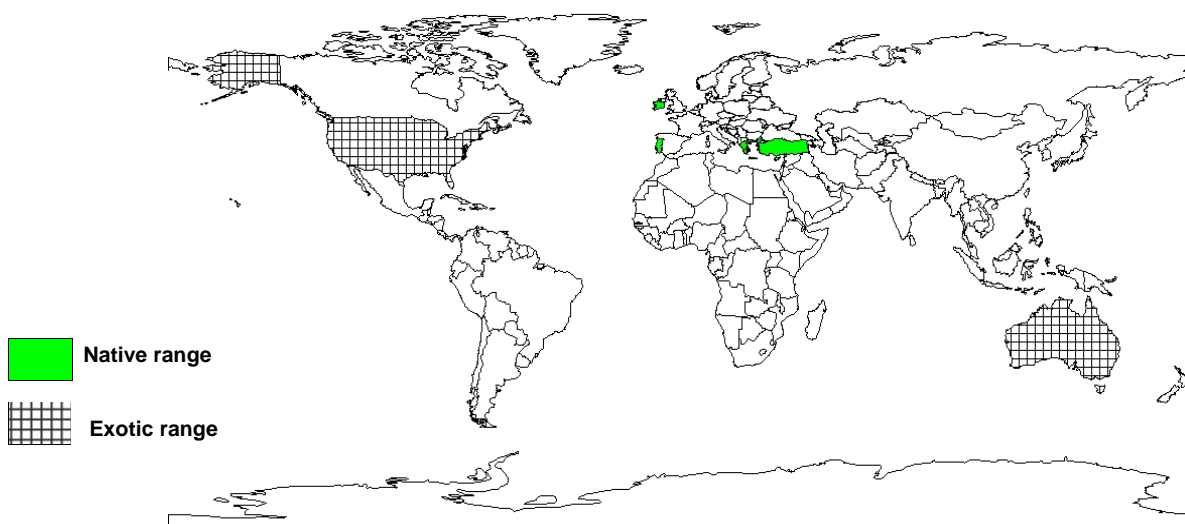
Rainfall: 600-800 mm.

Soil type: clay; sand; loam; acidic; alkaline; well-drained dry or moist soil. Trees are salt tolerant.

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Greece, Ireland, Lebanon, Portugal, Turkey

Exotic: Australia, 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:** Fruits can be eaten fresh or cooked but has little flavor. The fruit contains about 20% sugars and is used to make delicious and nourishing jams and preserves. The fruits can be fermented to make aromatic alcoholic beverages. In Portugal, strawberry tree fruits are fermented to make a strong tasting wine known as medronho or medronheira, tsipuoro in Greece, Fior de Corbezzolo in Sicily, Creme d'Arbouse in Corsica among others.

**Medicine:** The tree is little used in herbalism but deserves modern investigation. All parts of the plant contain ethyl gallate, a substance that possesses strong antibiotic activity against the Mycobacterium bacteria. The leaves, bark and root are astringent and diuretic. They are also a renal antiseptic and so used in the treatment of infections of the urinary system such as cystitis and urethritis. It is used in the treatment of diarrhea and dysentery and, a gargle can be made for treating sore and irritated throats. The flowers are weakly diaphoretic.

**Timber:** The wood is used in Greece to make flutes.

**Fuel:** The wood makes good charcoal.

**Tannin or dyestuff:** The bark which contains 45% tannin has been used in tanning leather. Tannin can also be obtained from the leaves and fruit.

**SERVICES**

**Ornamental:** The tree is commonly planted as ornamental for its pretty flowers and fruit especially in autumn when most shrubs are going dormant. Older specimens are especially attractive with their shredding gray-brown bark and twisted, gnarled trunks. It is a very popular ornamental in southern California.

**Shade or shelter:** Strawberry tree is good choice for a shrub border. It spreads quite wide as it grows taller and produces dense shade, making it ideal for use as a small shade, screen, hedge, or patio tree.

Strawberry tree is a good choice for coastal areas since it is salt tolerant.

**TREE MANAGEMENT**

Minimal pruning can be done to enhance shape e.g. to train as a single-trunked tree or to open up tree crown. New shoots can be pruned back to 2-3 leaves during growth. Strawberry tree is drought tolerant, but may need watering only during the autumn and winter. It may need protection from winter winds especially in their first winter.

When fully ripe fruits fall from the tree, it is advisable to grow the plant in short grass to cushion the fall of the fruit.

**GERMPLASM MANAGEMENT**

Seeds can be stored under cold stratification for up to 6 weeks. The fleshy coating on seeds should be removed before storage. Stored seed should be soaked for 5-6 days in warm water and then surface sown in a shady position in a greenhouse without allowing the compost to become dry. The seed usually germinates in 2-3 months at 20°C. Seedlings are prone to damping off, they are best transplanted to individual pots as soon as they are large enough to handle and should be kept well ventilated. Seedlings should be grown in a greenhouse for their first winter planted out in late spring after the last expected frosts. Root disturbance should be avoided and seedlings are best placed in their final positions whilst young.

**PESTS AND DISEASES**

No pests or diseases are of major concern.

**FURTHER READING**

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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/>)