

# Cyphomandra betacea



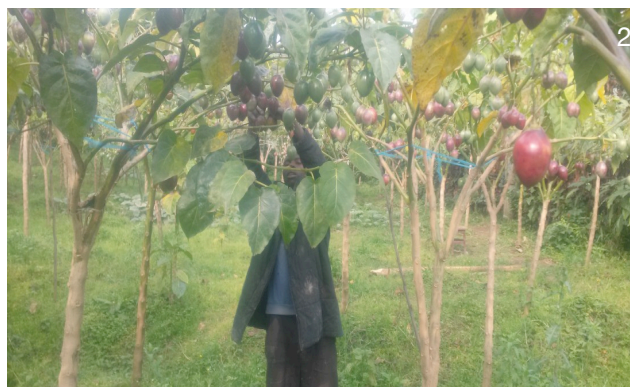
## Distribution, propagation and uses

### Taxonomy and nomenclature

**Family:** Solanaceae

**Synonym(s):** *Cyphomandra crassicaulis* (Ortega.) Kuntze;  
*Solanum betaceum* Cav.

**Common name(s):** Tree tomato, Tamarillo, Cape tomato (English), Tomate d'arbre (French), Mti nyanya (Swahili), Baumtomate (German), Boomtomaat (Dutch), Pomodoro arboreo (Italian), Ibinyomoro (Kinyarwanda)



Pic 1: Nzeyimana a farmer from Matyazo Cell, Karago Sector, Nyabihu District collects Tamarillo fruits from his farm.

Pic 2: Habiymbere Antoine from Macyazo Cell, Karago Sector, Nyabihu District prunes Tamarillo fruit trees at his farm.

Pic 3: Nsengiyumva a farmer from Macyazo Cell, Karago Sector, Nyabihu District at his Tamarillo fruit plantation.

Photos ©ICRAF/Rwanda

## Botanical description

*Cyphomandra betacea* is an evergreen shrub that grows up to 2-3 metres high and rarely passes 5 metres mark. The wood is brittle and the trees are short-lived, usually lasting 12-15 years. The trunk is single upright with lateral branches and a grey bark.

Its leaves are large, simple and perennial, and have a strong pungent smell. The flowers are pink-white and form clusters of 10-50 hermaphrodite flowers. They produce 1-6 fruits per cluster. Its roots are shallow and not very pronounced.

## Distribution and habitat

*Cyphomandra betacea* is native to forests of the Andes of Peru and Argentina. It has been introduced in subtropical areas throughout the world, including South Africa, India, Hong Kong, China, United States, Australia, and New Zealand. In Rwanda, tamarillo grows in altitude of 1600-2500 m above sea level with rainfall ranges of 1200-1600 mm per year. Tamarillo is also successfully grown at higher elevations of Malaysia and the Philippines and in Puerto Rico.

## Fruits and seed description

The fruits are egg-shaped and about 4-10 cm long and 3-5 cm wide. It produces fruit that is red, yellow, orange or purple. The long stemmed fruit is generally ovoid with somewhat pointed ends. The seeds are thin, flat and hard.

## Flowering and fruiting habit

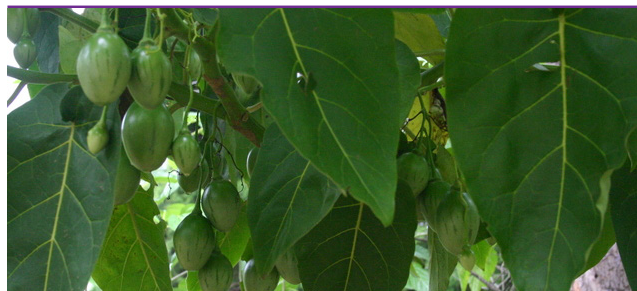
Pollination is done by both honey bees and bumble bees. Plants can also set fruits without cross pollination. Flowering begins about 6-8 months after planting. It takes approximately 25 weeks from fruit set to maturity.

## Harvesting

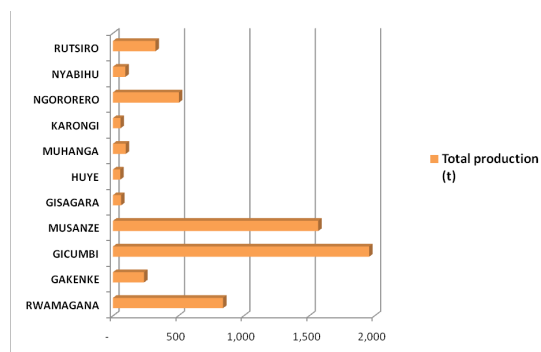
In the high altitudes of Rwanda, fruits are harvested about 12-18 months after planting. Unripe fruits are green and are ready to harvest when they develop the yellow or red colour characteristic of the particular variety. To harvest, simply pull the fruit from the tree with a snapping motion, leaving the stem intact.



*Cyphomandra betacea* fruits (left) and seeds (right)



Leaves and unripe fruits of *C. betacea*



Distribution areas and production in Rwanda



Distribution areas and production in Rwanda

### Seed extraction and cleaning

Seeds are extracted from good quality ripened fruits. They are washed, dried and stored in dry conditions.

### Germplasm management

*C. betacea* seeds are orthodox for storage and do not lose viability after 42 months of hermetic storage at -20°C with 5.5% moisture content. Reduction in viability occurs after 8-10 months of storage at room temperature. There are about 100,000 seeds/kg. Germination is accelerated by placing washed and dried seed in a freezer for 24 hours before planting out.

### Propagation and cultivation

The tree tomato requires fertile, light soil that is rich in organic matter. Perfect drainage is also necessary. Tamarillo grows from 300-700 m above sea level, it requires 1200-1600 mm of rain per year. In Rwanda, propagation is mainly done using seeds. Under ideal conditions, seeds germinate after 4-6 days, with a germination rate of 80-100%. Field spacing is 2x3m; close spacing is recommended in windy areas. Common niches for tamarillo are open areas in monoculture and under banana plantations.

### Uses

**Food:** Its fruits are excellent sources of vitamin A, vitamin B6, vitamin C and vitamin E. Tamarillo also has a significant amount of minerals like iron, potassium and magnesium. The tamarillo is an excellent source of antioxidants because it contains a type of flavonoid known as anthocyanins. They can be used as a substitute for tomatoes, cut fresh in salads, served sweetened in desserts, or added to spicy sauces.

**Tannin or dyestuff:** The leaves of tamarillo have been used as a dye. Unripe fruits are used in the Colombian tanning industry to decolour hides.

**Medicine:** *C. betacea* fruit is believed to combat anaemia and respiratory diseases. The tamarillo shoots are sometimes added to children's baths to prevent illness.

**Ornamental:** It can also be planted as an ornamental tree in compounds.

### Further reading

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