

## Cassia javanica

johar

### LOCAL NAMES

English (apple Blossom cassia); Filipino (antsoan (Bikol)); Indonesian (trengguli, boking-boking (Sumatra), bobondelan); Malay (busok-busok (Peninsular), bebusok); Thai (kalalphruk (central, northern)); Trade name (johar); Vietnamese (mu[oof]ng b[of] c[aj]p)

### BOTANIC DESCRIPTION

*Cassia javanica* is a small to medium-sized tree up to 25(-40) m tall, deciduous or semi-deciduous, trunk of young trees either smooth or armed with stump-remnants of branches.

Leaves with 5-15(-20) pairs of leaflets, petiole 1.5-4 cm long, leaflets elliptical-ovate to oblong, 2.5-5 cm x 1.5-2.5 cm, base broadly rounded, apex acute or rounded to obtuse.

Inflorescence a raceme or panicle, terminal on leafy shoots or lateral on short side branches, up to 16 cm long, many-flowered; flowers with sepals 4-10 mm long, green to dark red, petals 15-35 mm long, whitish to reddish or buff, stamens 10, 3 longer ones with filaments 2 cm long, 4 shorter with filaments about 1 cm long and 3 reduced with filaments about 1 cm long and minute anthers.

Fruit pendent, terete, 20-60 cm long, 1-1.5(-2.5) cm in diameter, indehiscent.

Seeds numerous, embedded in a flat disk.

*C. javanica* trees show Troll's architectural model, with sympodial growth and all axes plagiotropic, the architecture being built by their continual superposition. *C. javanica* is very polymorphic and several subspecies are distinguished.

### BIOLOGY

In East Java *C. javanica* flowers in October-December and fruits in the dry season. It has been observed flowering and fruiting in a mast fruiting year in Peninsular Malaysia.

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Fabaceae - Caesalpinioideae



Habit at Baldwin Ave  
Maui, Hawaii (Forest & Kim Starr)



Flowers at Baldwin Ave Maui, Hawaii  
(Forest & Kim Starr)



Close-up of flowers at Baldwin Ave Maui,  
Hawaii (Forest & Kim Starr)

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### ECOLOGY

*C. javanica* is usually found in more open sites in the forest, but can also occur in closed evergreen primary forest. *C. javanica* also occurs in deciduous monsoon forest and in more open or even savanna-like habitats. It has a wide ecological amplitude and is generally found at lower elevations. It is often naturalized in secondary forest close to locations where it has been planted. The various subspecies of *C. javanica* show preferences for either dry or moist habitats on a wide variety of soils.

### BIOPHYSICAL LIMITS

Altitude: Up to 400 m.

Mean annual temperature: 19-25 deg C

Mean annual rainfall: 650-2400 mm

Soil types: In Java it has been reported from fertile volcanic loams, and from marshy, sandy and limestone soils.

### DOCUMENTED SPECIES DISTRIBUTION

Native: China, Indonesia, Malaysia, Mauritius, Myanmar, Thailand, United States Misc. Pacific Islands

Exotic: India, Philippines



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.

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### PRODUCTS

**Timber:** The wood is used for general construction, furniture and cabinet making. *C. javanica* yields a lightweight to heavy hardwood with a density of 400-875 kg/m cubic at 15% moisture content. Heartwood pale yellow when fresh, turning red or pale orange-brown with age, demarcated sharply or not sharply from the 2-5 cm wide white sapwood; grain interlocked; texture moderately fine. Shrinkage of the wood is low; it seasons well with little or no degrade. The wood is hard and strong. It works well and finishes well. The sapwood is very perishable, the heartwood moderately durable when exposed to the weather or in contact with the ground, and very durable for interior work. The sapwood is susceptible to Lyctus.

**Tannin or dyestuff:** The bark has been used for tanning leather, but the amount of tannin is comparatively low.

**Medicine:** The ripe pods and seeds are used as a traditional laxative throughout the Malesian area. In Thailand, bark and seeds are also used as antipyretics. However, it was noted that emesis may be observed. Anthraquinone glycosides are found in *C. javanica*

### SERVICES

**Ornamental:** *C. javanica* is extensively used as an ornamental and roadside tree, particularly forms of subsp. *agnes* (de Wit) K. Larsen with larger flowers.

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### **TREE MANAGEMENT**

*C. javanica* is not resistant to fire, but tolerates drought and shade. It coppices vigorously and can be pollarded.

### **GERMPLASM MANAGEMENT**

There are 5700-8400 dry seeds/kg. Seed storage is variable: fresh seed can be stored for only 3 weeks in airtight containers, but storing dry seeds for over one year is also reported. Seeds start to germinate after 7 days and 80% of the seedlings appear within in 14-30 days. Pods can easily be collected from the ground and have to be opened with a chopping knife.

### **PESTS AND DISEASES**

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**SUGGESTED CITATION**

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