

## Eucalyptus citriodora

lemon-scented gum

### LOCAL NAMES

Amharic (shito bahir zaf); Arabic (kafur limuni); English (spotted gum, lemon-scented iron gum, lemon-scented gum, lemon-scented eucalypt, lemon gum); French (eucalyptus a odeur de citron); German (Zitronen- Eukalyptus); Luganda (kalintusi); Spanish (citriodora); Swahili (mkaratusi); Trade name (lemon-scented gum); Vietnamese (b[a]ch d[af]n d[or])

### BOTANIC DESCRIPTION

*Eucalyptus citriodora* is a large, handsome evergreen tree, 24-40 (max. 50) m in height; tall, straight trunk, 60-130 cm in diameter; open, graceful crown of drooping foliage; bark smooth, white, powdery, sometimes pink, red or blue-grey, on large trunks dark or grey and shaggy.

Juvenile leaves alternate, ovate to broadly lanceolate, sometimes setose, petiolate, sometimes peltate; adult leaves alternate, lanceolate to narrowly lanceolate, 8-16 x 0.5-2 cm, acuminate, strongly lemon scented when crushed; petiole 13-20 mm long.

Inflorescence terminal and compound or axillary and simple; umbels 3 flowers; flower buds white, clavate; operculum hemispherical, 3-4 x 4-5 mm, apiculate.

Fruit ovoid or urceolate, 7-15 x 7-11 mm, often warty, with 3-4 deeply induced valves; seeds few, irregularly elliptical relatively large, shiny, black, 4-5 mm long.

The genus *Eucalyptus* was described and named in 1788 by the French botanist l'Héritier. The flowers of the *Eucalyptus* species are protected by an operculum, hence the generic name, which comes from the Greek words 'eu' (well) and 'calyptos' (covered). The specific epithet means lemon-scented.

### BIOLOGY

*E. citriodora* is cross-pollinated, and the pollinating agents are usually blow flies, ants and, in particular, bees. The periodicity of reproduction of *E. citriodora* seems to be altered when it is planted outside its natural range. In Australia, it bears seed only every 3-5 years, while it fruits abundantly every year when grown as an exotic species in Brazil.

Hook.

Myrtaceae



Round urn fruit at Hobby collection, Maui, Hawaii (Forest and Kim Starr)



Round urn fruit at Hobby collection, Maui, Hawaii (Forest and Kim Starr)



Bark at Keanae Arboretum, Maui, Hawaii (Forest and Kim Starr)

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## ECOLOGY

*E. citriodora* grows naturally on rolling undulating plateaux, including dry ridges, in open forest and woodland, generally on poor soils, from 80 to 800 m altitude. The species can survive a severe dry season.

In its natural range, the species is restricted to the central and northern coast of Queensland, with the main occurrence between Mackay and Maryborough, where it extends from the coast to over 200 miles inland. It is also common on a limited area of the higher and drier country near Atherton. The climate is tropical to subtropical and frost free near the coast, or with light frost inland at the higher altitudes. The main rainfall season is summer.

## BIOPHYSICAL LIMITS

Altitude: 0-1600 m, Mean annual temperature: 17-24 deg. C, Mean annual rainfall: 650-1600 mm

Soil type: It is tolerant of a variety of soils. Commonly found on poor, gravelly soils, Podzols and residual Podzols of lateritic origin, and prefers well-drained but somewhat gravelly subsoils.

## DOCUMENTED SPECIES DISTRIBUTION

Native: Australia

Exotic: Albania, Algeria, Brazil, Cyprus, Egypt, Ethiopia, Fiji, Ghana, Greece, India, Italy, Kenya, Libyan Arab Jamahiriya, Malaysia, Malta, Morocco, Nigeria, Portugal, Spain, Sri Lanka, Tanzania, Tunisia, Uganda, United States of America, Vietnam, Zimbabwe



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**

**Apiculture:** *E. citriodora* is a favourite of beekeepers because of the high quality and quantity of honey produced. Honey produced is light amber.

**Fibre:** The tree is planted as one of the better eucalypts for producing pulp in low-altitude areas of tropical and subtropical regions.

**Timber:** The wood density is 785-990 kg/cubic m at 12% mc. The wood is heavy, strong, tough and resistant to termites. The heartwood is light brown to grey-brown and sometimes waxy to the touch. The sapwood is whitish, pinkish or cream, usually 25-60 mm wide, but the width varies with growth rate. The grain is straight to interlocked, forming a ribbon stripe when quarter-sawn; a fiddleback pattern is sometimes evident. The timber is used for general construction, bridges, railway sleepers and ties, flooring, poles, sporting goods, agricultural implements and tool handles.

**Essential oil:** The commercially important eucalyptus oil distilled from the leaves of this and other *Eucalyptus* species has medicinal and industrial uses.

**Medicine:** The oils are used with steam and other preparations as an inhalant to relieve colds and influenza symptoms. Because of the refreshing odour of the oil and its efficiency in killing bacteria, it also finds application as antiseptic.

### **SERVICES**

**Reclamation:** *E. citriodora* is planted for reforestation.

**Ornamental:** It is cultivated in Australia, Brazil and North Africa for beautification.

**Intercropping:** Studies in Nigeria suggest that beans are incompatible with *E. citriodora*, but maize and sorghum may be compatible. Addition of fertilizer can offset to an extent the depressive effects of *E. citriodora* on crops.

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### **TREE MANAGEMENT**

Plantations can be established at a regular spacing of 3-4 m, but a spacing of 3 x 2 m is also practised. A mature tree is able to compete with weeds, although when young, good weed control (usually a 1m strip along each planting line) is essential, and 4-5 weedings each year for 2 years may be necessary before site occupancy is achieved. Growth is usually rapid, and subsequent management depends on the purpose for which the trees are being grown. If grown for pulpwood, the trees may be harvested after 6-10 years. Plantations grown for saw logs will require thinning.

### **GERMPLASM MANAGEMENT**

Seed storage behaviour is orthodox. Viability is lost within 3 years in hermetic storage at room temperature with 13 + or - 2% mc. Hermetic storage at 4-6% mc and subzero temperatures is recommended. There are 140 000-220 000 seeds/kg.

### **PESTS AND DISEASES**

*E. citriodora*, when young, is liable to attack by termites, but it is attacked less by *atta* ants than most eucalyptus. It resists attacks by the *Gonipterus* beetle.

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### **SUGGESTED CITATION**

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