

## **Cordia alliodora**

salmwood, onion cordia, laurel blanco, cordia

(Ruiz et Pavón) Cham.

Boraginaceae

### LOCAL NAMES

Creole (bwa soumi); Creole Patois (chene caparo); English (laurel, Spanish elm, spruce, salmwood, smoke wood, brown silver balli, corallilo, cordia, cyp, cypress, Ecuador laurel); French (bois de roge, chêne noir, bojon, chêne caparo, bois de rose, bois de Rhodes, bois cypre, bois soumis); German (Rosenholz); Spanish (cinchado, capá o laurel, capa prieto, caparó, chaquine, d'ou lemon, clariaba parda, capá de sabana, chullachaqui blanco, cheven, cypre, bohun, ajahatsa, amapa, amapa asta, amapa blanca, amapa bola, anallo caspi, arbol del ajo, canalete, auxemma, capa de sabana, bolaina, botoncillo, guacimo nogal, caly, canalete de humo, capa, capa de olor, capá de olor, asca, tacurai, freijo, pardillo, partago, picana, picana negra, salaam, solera, soleria, solerito, nogal cafetero, suchil sabanero, nogal, tama palo santo, tambor hormiguero, uruazeiro, utaatigo, uurushi numi, vara de humo, varia, varia amarilla, varia colorada, suchil, laurel de puna, aguardientillo, guacimilla, varia prieta, hochi, hormiguero, lanza blanca, lapochillo, laurel, laurel blanco, laurel de monte, dze-ui, laurel macho, laurel negro, laurel prieto, louro, louro amarello, mataatiyo, moho, momiguilla, muneco); Trade name (onion cordia, salmwood, cordia, laurel blanco)

### BOTANIC DESCRIPTION

*Cordia alliodora* grows to over 40 m. Bole generally straight, cylindrical; often clear of branches for up to 50-60% of the total tree height. May or may not be buttressed; on shallow soils, buttresses may extend 1-1.5 m up the trunk. On good sites, *C. alliodora* typically achieves a diameter at breast height of 30-50 cm, although it may exceed 1 m. Bark smooth; greenish colour when young, greenish-black, smooth or narrowly fissured when mature. The thin, tough, pale underbark darkens rapidly on exposure to light. Some trees have pronounced nodal swellings where the branches have been shed.

Leaves simple, alternate, up to 5 cm wide and 18 cm long, pointed at the base. Upper leaf surface may have scattered hairs when young but becomes smooth when mature; lower surface covered with stellate hairs. Petioles 1-2 cm long; slender and sparsely haired, like the greenish twigs.

Flowers hermaphroditic, unspecialized, about 1 cm in length; occur in a large, auxiliary terminal inflorescence with flowers as few as 50 up to as many as 3000.

The generic name honours a 16th century German botanist, Valerius Cordus. The species is named 'alliodora' because of the garlic odour that the leaves emit when they are crushed.

### BIOLOGY

Flowering starts 5-10 years after planting but occasionally when trees are 2 years old. Time of flowering and maturation of the fruit varies with locality. *C. alliodora* is reported to flower at any season in the equatorial climate of Colombia, while it is more synchronized in Central America. Flowers are heterostylous, and a strong incompatibility mechanism (sporophytic diallelic 1-locus) is evident, with a low level of failure. Pollination is predominantly entomophilous, with the small, unspecialized flowers attracting a wide variety of insect pollinators, especially Lepidoptera. The mature fruit is shed with the withered flower still attached, which acts as a parachute when the fruit falls, and possibly assists wind dispersal.



*C. alliodora*, self pruning of naturally regenerated trees over cacao, San Francisco, Honduras. (David Boshier)



*C. alliodora*, a wet zone population in a 14 year old provenance trial at Tumaco, Colombia. (David Boshier)



*C. alliodora*, mature seed after cleaning. (David Boshier)

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### ECOLOGY

*C. alliodora* is a pioneer plant found in a wide range of habitats. The tree is common in drier areas. It will tolerate a mean annual rainfall as low as 750 mm, but under these conditions growth is slower and the form of the stem crown poorer; optimal growth occurs where mean annual rainfall exceeds 2000 mm. *C. alliodora* is a strong, light-demanding species that readily colonizes exposed fertile soil. Very site sensitive with regard to soil conditions. Not only does it prefer soils free from seasonal waterlogging, it is also very demanding of nutrients.

### BIOPHYSICAL LIMITS

Altitude: 0-2000 m, Mean annual temperature: 24 deg. C, Mean annual rainfall: 750-2000 mm

Soil type: It is predominantly a species for planting on recently cleared forest sites, and degraded soils should be avoided.

### DOCUMENTED SPECIES DISTRIBUTION

- Native: Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Martinique, Mexico, Netherlands Antilles, Nicaragua, Panama, Puerto Rico, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Trinidad and Tobago, Venezuela, Virgin Islands (US)
- Exotic: Congo, Cote d'Ivoire, Fiji, Ghana, Indonesia, Liberia, Mauritius, Nepal, Nigeria, Sierra Leone, Solomon Islands, Sri Lanka, Uganda, US, Vanuatu



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**

Food: The fruits are edible but not very tasty.

Apiculture: Flowers are a major source of viscous, extra-white honey.

Timber: A renowned timber-producing species. The wood is usually straight grained, easy to work to a smooth finish, with little dulling of cutting edges. The wood is used for building construction, flooring, furniture and veneer manufacture, boat timbers, oars, rail sleepers, turnery, scientific equipment, and a wide variety of carvings and artists' equipment. The wood is resistant to decay; it has some resistance to marine borers and is outstandingly resistant to termite attack.

Medicine: A decoction of the leaves is used as a tonic and a stimulant, especially in cases of catarrh and lung infection. Pulverized seeds are used in the treatment of cutaneous diseases.

### **SERVICES**

Shade or shelter: Grown as a shade tree for coffee and cocoa plantations and in pastures, often in combination with *Erythrina poeppigiana*. Plantations exposed to hurricanes and cyclones have shown above-average resistance to stem break and wind throw.

Soil improver: Improved nutrient recycling is brought about by growing *C. alliodora* in coffee plantations.

Ornamental: The tree is planted as an ornamental because of its attractive, abundant, white, fragrant flowers.

Intercropping: Good tree for combining with crops. It has been incorporated with pasture, often in mixture with woody species of *Erythrina*. It has also been grown with sugarcane.

**TREE MANAGEMENT**

Line planting at 2.5 x 10 m and subsequent removal of the overstorey canopy is satisfactory for natural forest. Secondary and disturbed forests require earlier capture of the site to avoid prolonged intensive weeding operations. This could be facilitated by reducing the distance between the lines to 5 m. The species' simple nursery requirements and the ease with which plantations can be raised from seedlings, stumps, or even direct sowing are important factors that greatly facilitate plantation management. Even when grown as a solitary tree in the open, *C. alliodora* maintains a single, persistent stem and narrow crown, and prunes itself to about two-thirds of its total height. It coppices well.

**GERMPLASM MANAGEMENT**

The time to collect seed of maximum viability is indicated when the flower panicles turning from yellow to brown without appearing burnt, the colour being that of the persistent corolla.

Germination percentage reaches 80% or more. Whole seed 11-40% mc. Orthodox seed storage behaviour; seed viability is halved after 12 months storage at 5 deg. C with 12-18% mc; 50% germination after 1 year storage at 5 deg. C with between 10-25% mc; viability is reduced from 63% to 31% after 1 year storage at room temperature with 11.5% mc; seeds tolerate desiccation to 6.9% mc, viability is maintained at 2-5 deg. C with 6.9% mc. Seed dried below 10% mc, and stored at 2 deg. C shows little deterioration over 10 years. There are 55 000-75 000 viable seed/kg.

**PESTS AND DISEASES**

Mole crickets are known to destroy over 50% of direct sowing, but lacewing bugs (*Corythuca gossypii*) can cause more serious damage.

In its natural distribution under high humidity conditions, cankers are likely to develop on the bark. The rust fungus *Puccinia cordiae* is the primary agent responsible for this disease. Other diseases are a root disease caused by *Phellinus noxius* and a stem canker caused by *Corticium salmonicolor*. Occasionally cankers may occur on young green shoots, but the most evident and damaging effects of the disease are large cankers on the trunks.

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### **FURTHER READNG**

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### **SUGGESTED CITATION**

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