# GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Syzygium cumini***

***Syzygium cumini*** 简体中文 正體中文

**System:** Terrestrial

| Kingdom | Phylum | Class | Order | Family |
|---|---|---|---|---|
| Plantae | Magnoliophyta | Magnoliopsida | Myrtales | Myrtaceae |

**Common name**

jambol (English, Brazil), djoowet (English, Java), jamelao (English, Brazil), koeli (English, Surinam), guayabo pesjua (English, Venezuela), pesjua extranjera (English, Venezuela), jamoen (English, Surinam), jalao (English, Brazil), jambulao (English, Brazil), druif (English, Surinam), jaman (English, India/Malaya), jamelongue (English, India/Malaya), jambu (English, India/Malaya), jamelong (English, India/Malaya), jambhool (English, India/Malaya), jambool (English, India/Malaya), salam (English, India/Malaya), jambul (English, India/Malaya), jiwat (English, India/Malaya), jamblang (English, India/Malaya), koriang (English, India/Malaya), jambolanier (French), faux-pistachier (French), Java plum (English), jamelon-guier (French), jamelonguier (English, New Caledonia), jambolan plum (English), paramu (English, Cook Islands (Aitutaki)), damson plum (English, Jamaica), Portuguese plum (English), duhat (English, Philippines), Ka'ika (English, Cook Islands), mesekerrak (English, Palau), wa (English, Thailand), mesegerak (English, Palau), duhat (English, Guam), Malabar plum (English), pistati (English, Cook Islands), black plum (English), lomboy (English, Philippines), kavika ni India (English, Fiji), jammun (English, Fiji), indian blackberry (English, Jamaica), purple plum (English), pring bai (English, Cambodia), ma-ha (English, Thailand), va (English, Laos), pring das krebey (English, Cambodia), voi rung (English, Vietnam), mesigerak (English, Palau), lunaboy (English, Philippines), doowet (English, Java), jamélongue (French), mesekerrák (English, Palau)

**Synonym**

*Eugenia cumini* , (L.) Druce
*Syzygium jambolana* , (Lam.) DC.
*Eugenia jambolana* , Lam.
*Syzygium jambolanum* , DC.
*Calyptranthes oneillii* , Lundell
*Eugenia caryophyllifolia* , Lam.
*Eugenia cumini* , (L.) Druce
*Eugenia jambolana* , Lam.
*Myrtus cumini* , L.
*Syzygium caryophyllifolium* , (Lam.) DC.
*Syzygium jambolanum* , (Lam.) DC.
*Calyptranthes caryophyllifolia* , (Lam.) Willd.

**Similar species**

**Summary**

Syzygium cumini has been introduced to many different places where it has been utilised as a fruit producer, as an ornamental and also for its timber. It has the ability to form a dense cover, excluding all other species. This characteristic has allowed Syzygium cumini to become invasive in Hawaii where it prevents the re-establishment of native lowland forest and very invasive in the Cook Islands and in French Polynesia. This tree has not been evaluated for biological control, but vigorous efforts to exterminate it with herbicides are taking place in Hawaii.

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**Species Description**
\"The jambolan is fast-growing, reaching full size in 40 years. It ranges up to 100 feet (30m) in India and Oceania; up to 40 or 50 feet (12-15m) in Florida; and it may attain a spread of 36 feet (11m) with a trunk diameter of 2 or 3 feet (0.6-0.9m). It usually forks into multiple trunks, a short distance from the ground. The bark on the lower part of the tree is rough, cracked, flaking and discoloured; further up the trunk it is smooth and light-grey. The turpentine-scented evergreen leaves are opposite, 2 to 10 inches (5-25cm) long, 1 to 4 inches (2.5-10cm) wide; oblong-oval or elliptic, blunt or tapering to a point at the apex; pinkish when young; when mature, leathery, glossy, dark-green above, lighter beneath, with conspicuous, yellowish midrib. The fragrant flowers, in 1to 4 inches (2.5-10cm) clusters, are 1/2 inch (1.25cm) wide, 1 inch (2.5cm) or more in length; have a funnel-shaped calyx and 4 to 5 united petals, white at first, then rose-pink, which quickly shed leaving only the numerous stamens.
The fruit, in clusters, is round or oblong, often curved; 1/2 to 2 inches. (1.25 - 5cm) long, and usually turns from green to light-magenta, then dark-purple or nearly black as it ripens. A white-fruited form has been reported in Indonesia. The skin is thin, smooth, glossy, and adherent. The pulp is purple or white, very juicy and normally encloses a single, oblong, green or brown seed, up to 1 1/2 inches. (4cm) in length, though some fruits have 2 to 5 seeds tightly compressed within a leathery coat and some are seedless. The fruit is usually astringent, sometimes unpalatably so, and the flavour varies from acid to fairly sweet.\" (Morton, J. 1987)

**Notes**
In southern Asia, the tree is venerated by Buddhists, and it is commonly planted near Hindu temples because it is considered sacred to Krishna. The leaves and fruis are employed in worship, (Morton, J. 1987). It is not really fire resistant, but fires are rarely intense enough in the stands to produce other than peripheral damage, (Smith, 1998).

**Lifecycle Stages**
\"The fruit is in season in the Marquesas in April; in the Philippines, from mid-May to mid-June. In Hawai‘i, the crop ripens in late summer and fall. Flowering occurs in Java in July and August and the fruits ripen in September and October. In Ceylon, the tree blooms from May to August and the fruit is harvested in November and December. The main fruiting season in southern Florida (where the tree blooms principally in February and March) extends through late May, June and July. Small second crops from late blooms have been observed in October. Individual trees may habitually bear later than others.\" (Morton, J. 1987). In India “Jamun is never leafless in the moist localities, the new coppery leaves start before the old leaves fall, however, in dry localities, it becomes leafless for a short period of time in the hot season. Usually leaves start falling about January and continue doing so during February and March.” (Luna 1996)

**Uses**
Jambolan fruit can be eaten raw and can be made into tarts, sauces and jams. Good quality jambolan juice is excellent for sherbet, sirup and \"squash\", an Indian drink. In Goa and the Philippines, jambolans are an important source of wine, somewhat like Port, and the distilled liquors, brandy and \"jambava\" have also been made from the fermented fruit. Can also be made into Vinegar. The jambolan tree is of real value in apiculture. The flowers have abundant nectar, and the honey is of fine quality.
The leaves have served as fodder for livestock and as food for tassar silkworms in India. In Zanzibar and Pemba, the natives use young jambolan shoots for cleaning their teeth. The essential oil distilled from the leaves is used to scent soap and is blended with other materials in making inexpensive perfume. Its chemical composition has been reported by Craveiro *et al*. in Brazil. It consists mainly of mono- or sesqui-terpene hydrocarbons which are \"very common in essential oils.\"
Jambolan bark yields durable brown dyes of various shades depending on the mordant and the strength of the extract. The bark contains 8 to 19% tannin and is much used in tanning leather and preserving fishing nets. When kiln dried, the heartwood is hard, difficult to work but polishes well. It is durable in water and resistant to borers and termites. In India, it is commonly used for beams and rafters, posts, bridges, boats, oars, masts, troughs, well-lining, agricultural implements, carts, solid cart wheels, railway sleepers and the bottoms of railroad cars. It is sometimes made into furniture.
Medicinally, the fruit is stated to be astringent, stomachic, carminative, antiscorbutic and diuretic. Cooked to a thick jam, it is eaten to allay acute diarrhea. The juice of the ripe fruit, or a decoction of the fruit, or jambolan vinegar, may be administered in India in cases of enlargement of the spleen, chronic diarrhea and urine retention. Water-diluted juice is used as a gargle for sore throat and as a lotion for ringworm of the scalp. Seeds, in liquid or powdered form, are freely given orally, 2 to 3 times a day, to patients with diabetes mellitus or glycosuiria. In many cases, the blood sugar level reportedly is quickly reduced and there are no ill effects. The leaves, steeped in alcohol, are prescribed in diabetes. The leaf juice is effective in the treatment of dysentery, either alone or in combination with the juice of mango or emblic leaves. Jambolan leaves may be helpful as poultices on skin diseases. The leaves, stems, flowerbuds, opened blossoms, and bark have some antibiotic activity. A decoction of the bark is taken internally for dyspepsia, dysentery, and diarrhea and also serves as an enema. The root bark is similarly employed. Bark decoctions are taken in cases of asthma and bronchitis and are gargled or used as mouthwash for the astringent effect on mouth ulcerations, spongy gums, and stomatitis. Ashes of the bark, mixed with water, are spread over local inflammations, or, blended with oil, applied to bums. In modern therapy, tannin is no longer approved on burned tissue because it is absorbed and can cause cancer. Excessive oral intake of tannin-rich plant products can also be dangerous to health. The tree is grown as shade for coffee in India. It is wind-resistant and sometimes is closely planted in rows as a windbreak.\r\n\r\n(Morton, J. 1987)

**Habitat Description**
The tree occurs in the tropical and sub-tropical climates under a wide range of environmental conditions. Jambolan can thrive on a variety of soils in low, wet areas and on higher, well-drained land (loam, marl, sandy soils, calcareous soils).(Coronel 2001). It grows well in areas receiving heavy rainfall between 1,500-10,000mm per anum. It develops most luxuriantly in regions of heavy rainfall, as much as 400 in. (1,000cm) annually. In India it is usually found in areas receiving 900-5000mm. The mean relative humidity in July varies from 70 to 100% and in January from 40 to 90 %. It can tolerate prolonged flooding. It also grows well on well-drained soils and once established, can tolerate drought. The jambolan tree grows well from sea-level to 6,000 ft (1,800 m) but, above 2,000 ft (600 m) it does not fruit but can be grown for its timber. It prospers on river banks and has been known to withstand prolonged flooding. Yet it is tolerant of drought after it has made some growth. Dry weather is desirable during the flowering and fruiting periods. It is sensitive to frost when young but mature trees have been undamaged by brief below-freezing temperatures in southern Florida. Despite its ability to thrive in low, wet areas, the tree does well on higher, well-drained land whether it be in loam, marl, sand or oolitic limestone.\" (Morton, J. 1987)
In its area of distribution, the absolute maximum shade temperateur varies from 2.5o to 17.5oC. The mean daily maximum temperature in May which is the hottest month of the year, varies from 30o to 43.5oC, and the mean daily minimum temperature in the coldest month i.e. January varies from 5o to 23.9oC (Luna, 1996).

**Reproduction**
The panicles of small, greenish-white, sweet-scented flowers appear from March to May, the fruits are green at first; as they develop, turn pink and then finally purple –black at the time of ripening in June to August (In India). Fruit formation takes place about 32 days after flowering. The fruits are devoured by frugivorous birds, monkeys, squirrels and human beings, perhaps occasionally by feral pigs *(Sus scrofa)* therefore widely dispersed. Natural regeneration is profuse around the mother trees as the seeds fall in large quantities. Germination takes place on moist ground, each fruit may produce from one to four or even five seedlings clustered together in dense masses. Sometimes, seedlings of different years may be found under the same seed bearer, showing their degree of tolerance to shade. The seedlings are somewhat frost-tender, particularly on grassy ground, where they are frequently killed back. The natural reproduction of the species is helped by fire protection. Weeding has a marked effect on the growth and vigour of seedlings.(Luna 1996). Seeds loose viability quickly (Coronel 2001).

**General Impacts**
This large evergreen tree forms a dense cover, excluding all other species. Although it is not an aggressive invader of undisturbed forest like the closely related roseapple (*Syzygium jambos*), it prevents the re-establishment of native lowland forest. (PIER, 2002)

**Management Info**
This tree has not been evaluated for biological control (Smith, 1998), but vigorous efforts to exterminate it with herbicides are taking place in Hawai‘i (Morton, J. 1987).

**Pathway**
Was frequently grown in gardens in Malaya. (Morton, 1987)

**Principal source:** Morton, J. 1987.

**Compiler:** IUCN/SSC Invasive Species Specialist Group (ISSG)

**Review:** Dr. Pierre Binggeli

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**ALIEN RANGE**

**[2]** AUSTRALIA
**[1]** BERMUDA
**[1]** CAMBODIA
**[1]** CUBA
**[1]** FRENCH GUIANA
**[1]** GHANA
**[1]** GUAM
**[1]** HAITI
**[1]** INDONESIA
**[1]** JAMAICA
**[1]** LAO PEOPLE'S DEMOCRATIC REPUBLIC
**[1]** MAYOTTE
**[1]** NEW CALEDONIA
**[4]** PALAU
**[1]** PUERTO RICO
**[1]** SAINT LUCIA
**[1]** SWAZILAND
**[1]** BELIZE
**[1]** BRAZIL
**[7]** COOK ISLANDS
**[1]** FIJI
**[6]** FRENCH POLYNESIA
**[1]** GUADELOUPE
**[1]** GUATEMALA
**[1]** HONDURAS
**[1]** ISRAEL
**[1]** KIRIBATI
**[1]** MARTINIQUE
**[1]** MONTSERRAT
**[1]** NIUE
**[1]** PHILIPPINES
**[1]** REUNION
**[1]** SURINAME
**[2]** TANZANIA, UNITED REPUBLIC OF

**[1]** THAILAND
**[1]** TRINIDAD AND TOBAGO
**[1]** VENEZUELA
**[1]** TONGA
**[5]** UNITED STATES
**[1]** VIET NAM

## BIBLIOGRAPHY

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**Managment information**

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**Summary:** Ecology, synonyms, common names, distributions (Pacific as well as global), management and impact information.
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Swaziland s Alien Plants Database., Undated. *Syzygium cumini*
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**General information**

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**Summary:** Description, ecology, Distribution and life history of the Jambolan. A good overview.

Fournet, J. 2002. Flore illustr�e des phan�rogames de guadeloupe et de Martinique. CIRAD-Gondwana editions.

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**Summary:** An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.
Available from: http://www.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Syzygium+cumini&p_format=&p_ifx=plglt&p_lang= [Accessed March 2005]

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**Summary:** Description, and brief summary of the plants history.