

Family: *Myrtaceae*

Taxon: *Syzygium cumini*

Synonym: *Eugenia cumini* (L.) Druce
Eugenia jambolana Lam.
Myrtus cumini L. (basionym)
Syzygium jambolanum (Lam.) DC.
Caryophyllus jambos Stokes

Common Name jambolan
Malabar plum
jamélongue
Jambolanapflaume
guayabo psgua
Java plum

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	H(Hawai'i)
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score	9
101	Is the species highly domesticated?		y=-3, n=0		n
102	Has the species become naturalized where grown?		y=1, n=-1		
103	Does the species have weedy races?		y=1, n=-1		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)		High
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)		High
203	Broad climate suitability (environmental versatility)		y=1, n=0		y
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0		y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0		y
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205		y
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)		y
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)		n
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)		y
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		y
401	Produces spines, thorns or burrs		y=1, n=0		n
402	Allelopathic		y=1, n=0		
403	Parasitic		y=1, n=0		n
404	Unpalatable to grazing animals		y=1, n=-1		n
405	Toxic to animals		y=1, n=0		n
406	Host for recognized pests and pathogens		y=1, n=0		n
407	Causes allergies or is otherwise toxic to humans		y=1, n=0		n
408	Creates a fire hazard in natural ecosystems		y=1, n=0		n

409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	y
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	n
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides	y=-1, n=1	y
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	n

Designation: H(Hawai'i)

WRA Score 9

Supporting Data:

101	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	No evidence that species is highly domesticated
201	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	<i>S. cumini</i> is a large evergreen tree 13 to 30 m tall. It is widely distributed in India, in all except the most arid regions, and its natural distribution probably includes Myanmar, Malaysia, Vietnam, Philippines, Indonesia and Australia.
202	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	<i>S. cumini</i> is highly suited to tropical and subtropical climates.
203	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	- Altitude range: 0 - 1800 m - Mean annual rainfall: 500 - 4000 mm - Rainfall regime: summer - Mean annual temperature: 25 - 27°C - Mean maximum temperature of hottest month: 30 - 43°C - Mean minimum temperature of coldest month: 5 - 24°C - Absolute minimum temperature: > 4°C [elevational range >1000 m indicated environmental versatility]
204	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	<i>S. cumini</i> is a large evergreen tree 13 to 30 m tall. It is widely distributed in India, in all except the most arid regions, and its natural distribution probably includes Myanmar, Malaysia, Vietnam, Philippines, Indonesia and Australia [Native or naturalized in regions with tropical or subtropical climates]
205	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	widely cultivated in the tropics and subtropics (including China, Africa, Brazil, Florida (USA) and the Caribbean).
205	2006. Global Invasive Species Database. <i>Syzygium cumini</i> . National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG), http://www.issg.org/database/species/ecology.asp?si=505	Known introduced range: Cook Islands, Fiji, French Polynesia, Guam, Hawai'i, Florida, New Caledonia, Niue, Palau, Tonga, China, Indonesia, Malaysia, Christmas Island, Australia, Africa, India, Caribbean, South America.
301	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	widely cultivated and naturalized; in Hawaii occasionally cultivated and now naturalized primarily in mesic valleys to disturbed mesic forest, 40-1230 m, documented from all of the main islands except Niihau and Kahoolawe.
301	2008. Foxcroft, L.C./Richardson, D.M./Wilson, J.R.U.. Ornamental Plants as Invasive Aliens: Problems and Solutions in Kruger National Park, South Africa. Environmental Management. 41: 32-51.	Evidence of naturalization [Kruger National Park, South Africa]
302	1987. Morton, J.. Fruits of warm climates - Jambolan (<i>Syzygium cumini</i>). J.F. Morton, http://www.hort.purdue.edu/newcrop/morton/jambolan.html	Heavy crops litter streets, sidewalks and lawns, attracting insects, rapidly fermenting and creating a foul atmosphere. People are eager to have the trees cut down. Where conditions favor spontaneous growth, the seedlings become a nuisance, as well. [landscape nuisance]
302	2006. Elevitch, C.R./Abbott, I.A./Leakey, R.R.B.. Traditional trees of Pacific Islands: their culture, environment, and use. Permanent Agriculture Resources, Honolulu, HI	Be aware of this intense root competition with trees such as Java plum (<i>Syzygium cumini</i>) [negative impacts on cultivation of bananas]
303	2007. Randall, R.P.. Global Compendium of Weeds - <i>Syzygium cumini</i> . Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/syzygium_cumini/	Not regarded as a significant weed of agriculture, horticulture or forestry
304	1992. Tanimoto, V.M./Char, W.P.. Alien Plant Control on State Lands Including Natural Areas. University of Hawaii Cooperative National Park Resources Studies Unit, Honolulu, HI	Table 3. Immediate and potential alien plant threats to Pahole Natural Area Reserve...Major Threat Group: [list includes <i>Syzygium cumini</i> among major threats of Pahole]
304	2000. Meyer, J-Y.. Preliminary review of the invasive plants in the Pacific islands (SPREP Member Countries). Invasive species in the Pacific: A technical review and draft regional strategy. South Pacific Regional Environment Programme, Samoa	Moderate invaders [Inland forest (Rarotonga)]; Dominant invaders [French Polynesia]; Among the most significant dominant invasive taxa which are found in most of the islands studied (dominant in at least 3 island groups, $D > 3$, and dominant plus moderate in at least 7 islands, $D + M > 7$, shown in bold in Table 1) are the trees <i>Adenantha pavonina</i> , <i>Leucaena leucocephala</i> , <i>Psidium</i> spp. (<i>P. cattleianum</i> and <i>P. guajava</i>), <i>Spathodea campanulata</i> , and <i>Syzygium</i> spp. (mainly <i>S. cumini</i> and <i>S. jambos</i>);
304	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	"This rapidly spreading tree forms dense canopies that shade out young native trees and prevent their regeneration." [an environmental weed]

304	2004. Meyer, J-Y.. Threat of Invasive Alien Plants to Native Flora and Forest Vegetation of Eastern Polynesia. Pacific Science. 58 (3): 357–375.	Some of the invasive alien plants are able to spread above 1,000 m elevation, choking the species-rich montane rain forests, including the cloud forests. Prevalent among these aliens are...the Java plum, <i>Syzygium cumini</i> (Myrtaceae), in the Austral, Gambier, Society, and Marquesas Islands, where it is encroaching the cloud forest slopes and highest summits of Hiva Oa up to 1,200 m elevation
304	2006. Global Invasive Species Database. <i>Syzygium cumini</i> . National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG), http://www.issg.org/database/species/ecology.asp?si=505	Decree No. 65 CM of January 23, 2006 presents a list of 35 invasive plants declared to be "Species that threaten biodiversity", one of which is <i>Syzygium cumini</i> . These plants are subject to a ban on new imports, propagation and planting, and prohibition of transfer from one island to another of any whole plant, fragment of plant, cutting, fruit or seed. Their destruction is permitted. [French Polynesia]
305	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	<i>Syzygium jambos</i> : It is invasive because it forms dense impenetrable thickets that expand rapidly. The dense canopies shade out almost all native species and lead to monospecific stands. The tree resprouts vigorously after damage.
401	1970. Stone, B.C.. The flora of Guam. Micronesica. 6: 1-659.	A tree to 20 tall with scaly gray bark; leaves opposite, dark green, 5-15 cm long, 2.5-8 cm wide, acuminate, elliptic-oblong, narrow; petioles 1-2.5 cm long [no spines, thorns or burrs]
402	2005. Shafique, S./Bajwa, R./Javaid, A./Shafiq, S.. Biological Control of Parthenium IV: Suppressive Ability of Aqueous Leaf Extracts of Some Allelopathic Trees Against Germination and Early Seedling Growth of Parthenium hysterophorus L.. Pakistan Jou	Aqueous extract bioassays were conducted to evaluate the allelopathic potential of five tree species viz. <i>Azadirachta indica</i> (L.) A. Juss., <i>Ficus benghalensis</i> L., <i>Melia azadarach</i> L., <i>Mangifera indica</i> L. and <i>Syzygium cumini</i> (L.) Skeels., for their use in <i>Parthenium hysterophorus</i> L. control, one of the world's worst weeds. Aqueous extracts of 2, 4, 6, 8 and 10% (w/v), obtained from dry leaves of test tree species were bioassayed on <i>P. hysterophorus</i> seeds. Toxicity of the aqueous extracts was assessed by recording their effect on germination, radicle and plumule length, and seedling biomass of the test weed species. Aqueous extracts of 8 and 10% concentrations of all the test tree species invariably and significantly ($P \leq 0.05$) suppressed germination of <i>P. hysterophorus</i> seeds. Extracts of <i>F. benghalensis</i> and <i>M. indica</i> were proved more inhibitory than rest of the test species, where extract of lowest concentration of 2% significantly suppressed the germination. Extracts of <i>M. azadarach</i> were found most effective in suppressing the radicle and plumule growth of <i>P. hysterophorus</i> followed by <i>S. cumini</i> and <i>F. benghalensis</i> ...Among the rest of the tree species, extracts of <i>F. benghalensis</i> and <i>S. cumini</i> were very effective in retarding plumule and radicle length...The present study reveals that the aqueous extracts of <i>M. azadarach</i> , <i>F. benghalensis</i> and <i>S. cumini</i> are highly effective against germination and growth of <i>P. hysterophorus</i> and can be used to control this noxious weed. [allelopathic effects demonstrated in experimental trials]
403	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	Not parasitic
404	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	It is a multipurpose tree which is highly valued for its edible fruits (also used medicinally), and as a fodder tree (foliage and seeds are both utilized)...susceptible to browsing [palatable to grazing animals]
405	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	It is a multipurpose tree which is highly valued for its edible fruits (also used medicinally), and as a fodder tree (foliage and seeds are both utilized). [no evidence of toxicity to animals]
406	1987. Morton, J.. Fruits of warm climates - Jambolan (<i>Syzygium cumini</i>). J.F. Morton, http://www.hort.purdue.edu/newcrop/morton/jambolan.html	In Florida, some jambolan trees are very susceptible to scale insects. The whitefly, <i>Dialeurodes eugeniae</i> , is common on jambolans throughout India. Of several insect enemies in South India, the most troublesome are leaf-eating caterpillars: <i>Carea subtilis</i> , <i>Chrysocraspeda olearia</i> , <i>Phlegetonia delatrbc</i> , <i>Oenospila flavifuscata</i> , <i>Metanastria hyrtaca</i> , and <i>Euproctis fraterna</i> . These pests may cause total defoliation. The leafminer, <i>Acrocercops phaeospora</i> , may be a major problem at times. <i>Idiocerus atkinsoni</i> sucks the sap of flowering shoots, buds and flower clusters, causing them to fall...Diseases recorded as found on the jambolan by inspectors of the Florida Department of Agriculture are: black leaf spot (<i>Asterinella puiggarii</i>); green scurf or algal leaf spot (<i>Cephaleuros virescens</i>); mushroom root rot (<i>Clitocybe tabescens</i>); anthracnose (<i>Colletotrichum gloeosporioides</i>); and leaf spot caused by <i>Phyllosticta eugeniae</i> . [no indication that it is an important alternate host]
407	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	It is a multipurpose tree which is highly valued for its edible fruits (also used medicinally), and as a fodder tree (foliage and seeds are both utilized). [no evidence of toxicity or allergenicity to humans]
408	1985. Smith, C.W.. Impact of Alien Plants on Hawaii's Native Biota. http://www.hear.org/books/hte1985/pdfs/hte1985mith.pdf	It is not really fire resistant, but fires are rarely intense enough in the stands to produce other than peripheral damage.

408	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	- Tolerates drought; fire; waterlogging; frost [no evidence of increased fire risk]
409	2006. Global Invasive Species Database. <i>Syzygium cumini</i> . National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG), http://www.issg.org/database/species/ecology.asp?si=505	Sometimes, seedlings of different years may be found under the same seed bearer, showing their degree of tolerance to shade.
410	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	The tree grows both in wet and well drained soils, and withstands prolonged flooding but not highly saline soils.
410	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	Soil descriptors - Soil texture: medium; heavy - Soil drainage: free; impeded; seasonally waterlogged - Soil reaction: acid; neutral - Special soil tolerances: shallow; sodic; saline
410	2006. Global Invasive Species Database. <i>Syzygium cumini</i> . National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG), http://www.issg.org/database/species/ecology.asp?si=505	Jambolan can thrive on a variety of soils in low, wet areas and on higher, well-drained land (loam, marl, sandy soils, calcareous soils).
411	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	<i>S. cumini</i> is a large evergreen tree 13 to 30 m tall. [not climbing or smothering]
412	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	"This rapidly spreading tree forms dense canopies that shade out young native trees and prevent their regeneration."
501	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	<i>S. cumini</i> is a large evergreen tree 13 to 30 m tall [not aquatic]
502	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Myrtaceae [not a grass]
503	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	Myrtaceae [not a nitrogen fixing woody plant]
504	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	Not a geophyte
601	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	No evidence of substantial reproductive failure in native habitat
602	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	It propagates easily from fresh seed by direct sowing and by seedlings or stump plants.
603	2010. WRA Specialist. Personal Communication.	Ability to hybridize naturally unknown
604	2007. Prakash, J./Singh, S.P.. Mode of Pollination, Fruit Set and Fruit Drop in Jamun (<i>Syzygium cumini</i> Skeels). Environment and Ecology. 25 (4): 1151-1153.	The investigation was carried out during 2000-01 and 2001-02 to study the mode of pollination and fruit drop pattern of jamun. Among different modes of pollination, the maximum percent fruit set was recorded in open pollination condition followed by hand pollination and negligible percentage of fruit set was noticed under bagging condition. [suggests self-incompatibility]
605	1970. Stone, B.C.. The flora of Guam. Micronesica. 6: 1-659.	flowers in cymose clusters, axillary or in axils of fallen leaves, white or pink, 12 mm wide; calyx 4-6 mm wide, up to 8 mm long; petals caducous; stamens many (c. 50), exserted, white or pinkish, to 7 mm long [flowers adapted for unspecialized insect pollinators]
605	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	a good source of nectar for honeybees [flowers adapted for unspecialized insect pollinators]
606	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	No evidence of reproduction by vegetative fragmentation
606	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	- Vegetative propagation by cuttings; air layering - Stand establishment using stump plants; direct sowing; planting stock
607	1987. Morton, J.. Fruits of warm climates - Jambolan (<i>Syzygium cumini</i>). J.F. Morton, http://www.hort.purdue.edu/newcrop/morton/jambolan.html	Seedlings grow slowly the first year, rapidly thereafter, and may reach 12 ft (3.65 m) in 2 years, and begin bearing in 8 to 10 years.

607	2000. Elevitch, C.R./Wilkinson, K.M.. Agroforestry guides for Pacific Islands. Permanent Agriculture Resources, Holualoa, HI	Growth rate: Medium (0.75-1.5 m/year); Height at maturity: 10-20 m
701	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Berries dark purple or black, glossy, oblong to oblong-ellipsoid, asymmetrical, 1.2-3 cm long, pericarp pulpy, ca. 1.5-3 mm thick. Seed usually 1, ellipsoid to oblong-ellipsoid, 1-1.5 cm long, testa closely coherent to cotyledons [no means of external attachment]
702	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	It is a multipurpose tree which is highly valued for its edible fruits (also used medicinally), and as a fodder tree (foliage and seeds are both utilized). It produces a strong heavy timber and good fuelwood. It is mainly found as a home garden fruit tree, although it is also found wild in secondary forests. It is also a host plant of the tasar silkworm, and a good source of nectar for honeybees. It is a sacred tree to Hindus and Buddhists.
703	2010. WRA Specialist. Personal Communication.	Seeds fairly large, and no evidence found of dispersal as a produce contaminant
704	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Fleshy-fruited [no adaptations for wind dispersal]
705	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	In the native range, it is common in forests, especially along margins of streams and ponds [suggests possible water dispersal, but fleshy fruits are primarily adapted for bird and other animal dispersal].
706	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Seeds are dispersed by birds and mammals.
706	2005. Corlett, R.T.. Interactions between birds, fruit bats and exotic plants in urban Hong Kong, South China. Urban Ecosystems. 8: 275–283.	All fruits smaller than their 13 mm maximum gape width were swallowed whole by bulbuls, while larger fruits were either eaten piecemeal (<i>Morus alba</i> and <i>Passiflora foetida</i>) or flesh was pecked from the seed (<i>Livistona chinensis</i> and <i>Syzygium cumini</i>).
706	2009. Gasperin, G./Pizo, M.A.. Frugivory and habitat use by thrushes (<i>Turdus</i> spp.) in a suburban area in south Brazil. Urban Ecosystems. 12: 425–436.	As a by-product of their catholic fruit diet, thrushes frequently disperse the seeds of exotic plant species in urban environments (Lombardi and Motta 1993, Reichard et al. 2001, Scheibler and Melo 2003). At least two of the exotic plants found in the diet of thrushes (<i>Morus nigra</i> and <i>Syzygium cumini</i>) are invasive species that can be detrimental to the native flora (Instituto Horus 2008).
707	2010. WRA Specialist. Personal Communication.	Fruits and seeds without means of external attachment [No evidence that propagules dispersed by other animals (externally)]
708	1998. Corlett, R.T.. Frugivory and seed dispersal by vertebrates in the Oriental (Indomalayan) Region. Biological Reviews. 73: 413-448.	The Asiatic jackal, <i>Canis aureus</i> , is an opportunistic feeder which eats significant amounts of fruit. In Bangladesh, India and Pakistan, the jackal eats fallen fruits of several species, including those dropped by feeding langurs, and seeds of <i>Cassia fistula</i> , <i>Salacia chinensis</i> , <i>Syzygium cumini</i> and other species have been found sprouting from the scats
708	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Seeds are dispersed by birds and mammals [and presumably survive passage through the gut]
801	1987. Morton, J.. Fruits of warm climates - Jambolan (<i>Syzygium cumini</i>). J.F. Morton, http://www.hort.purdue.edu/newcrop/morton/jambolan.html	Indian horticulturists have reported a crop of 700 fruits from a 5-year-old tree. [relatively large seeds, and lack of long-lived seed bank suggest that seed densities will never exceed 1000/m ²]
802	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	- Seed storage recalcitrant
802	2006. Global Invasive Species Database. <i>Syzygium cumini</i> . National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG), http://www.issg.org/database/species/ecology.asp?si=505	Seeds loose viability quickly

802	2008. Liu, K./Eastwood, R. J./Flynn, S./Turner, R. M./Stuppy, W. H.. Seed Information Database (release 7.1, May 2008). http://www.kew.org/data/sid	Storage Conditions: Viability lost within 2 weeks open storage at room temperature (Kandya, 1987). Recalcitrant (Mittal et al., 1999a). Seeds are desiccation sensitive, minimum safe mc = 45 % (Ouédraogo et al., 1999); embryonic axes are sensitive to drying below 63 % mc (58 % germination at 50 % mc, 14 % at 21 % mc, zero viability at <10 % mc), hydrated seeds can be stored at 16°C for 3 months (IPGRI/DFSC, 1999); MCS=46 %, no reduction in germination when dried to 40.1 % mc, but marked loss of viability when dried to 29.8 % mc and zero viability below 19.6 % mc. Viability of undried seeds maintained for up to 12 weeks at 16°C (IPGRI/DFSC, 1998); Short-lived (Dent, 1948); viability lost within 1 month in hermetic storage at room temperature with 13±2% mc (Kaul, 1979); within 3 months in open storage at room temperature (Campbell, 1980);seeds lose viability quickly (Verheij & Coronel, 1991); viability can be maintained for 2-6 months with partially dried seeds at 5°C (Riley, 1981)
803	2003. Motooka, P./Castro, L./Nelson, D./Nagai, G./Ching,L.. Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, http://www.ctahr.hawaii .	"Sensitive to foliar application of triclopyr and very sensitive to picloram. Saplings up to 10 feet tall were susceptible to drizzle applications of triclopyr ester in crop oil at 1 lb/acre. Sensitive to cut-surface applications (to drilled holes) of 2,4-D, dicamba, glyphosate, and triclopyr, and to basal bark and stump bark applications of triclopyr, 2,4 D, and imazapyr. If Florida, basal bark applications of triclopyr ester at 10% product in oil, cut-surface applications of triclopyr amine at 50% product in water, and with triclopyr ester at 10% product in water were all effective. Large trees have thick bark that makes basal bark treatments ineffective"
803	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Seedlings and saplings can be removed manually. Larger trees are cut and the cut stumps treated with herbicide to prevent regrowth.
804	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	It coppices and pollards well. It is not fire-tolerant when young
805	2001. Rayachhetry, M. B./Van, T. K./Center T.D./Elliott, M.L.. Host Range of Puccinia psidii, a Potential Biological Control Agent of Melaleuca quinquenervia in Florida. Biological Control. 22: 38-45.	Eucalyptus grandis, Eugenia paniculatum, and Syzygium cumini manifested chlorotic halos that developed into brown leaf spots but had no sporulation and were therefore considered resistant. [S. cumini considered resistant to Puccinia psidii, which is prevalent in the Hawaiian Islands]