

Family: *Myrtaceae*

Taxon: *Plinia edulis*

Synonym: *Myrciaria edulis* (Vell.) Skeels
Eugenia edulis Vell.

Common Name: Cambucá
Cambuca-verdadeiro

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: L
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score -3
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	n
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	n
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)	n
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)	n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)	n
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	
405	Toxic to animals		y=1, n=0	n
406	Host for recognized pests and pathogens		y=1, n=0	
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	
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		y=1, n=0	n
411	Climbing or smothering growth habit		y=1, n=0	n

412	Forms dense thickets	y=1, n=0	
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	
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/m ²)	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	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: L

WRA Score -3

Supporting Data:

101	1997. Landrum, L.R./Kawasaki, M.L.. The genera of Myrtaceae in Brazil: an illustrated synoptic treatment and identification keys. <i>Brittonia</i> . 49(4): 508-536.	[Is the species highly domesticated? No] No evidence
101	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Is the species highly domesticated? No] No evidence
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2006. Apel, M.A./Sobral, M./Zuanazzi, J.A./Henriques, A.T.. Essential oil composition of four <i>Plinia</i> species (Myrtaceae). <i>Flavour and Fragrance Journal</i> . 21: 565-567.	[Species suited to tropical or subtropical climate(s) 2-high] " <i>P. edulis</i> (Vell.) Sobral is a tree, occurring in the coastal Atlantic Brazilian forests, ranging from Rio de Janeiro to Rio Grande do Sul. It is occasionally cultivated for its fruits. Vernacular name: 'cambucá'."
202	2006. Apel, M.A./Sobral, M./Zuanazzi, J.A./Henriques, A.T.. Essential oil composition of four <i>Plinia</i> species (Myrtaceae). <i>Flavour and Fragrance Journal</i> . 21: 565-567.	[Quality of climate match data? 2-high] " <i>P. edulis</i> (Vell.) Sobral is a tree, occurring in the coastal Atlantic Brazilian forests, ranging from Rio de Janeiro to Rio Grande do Sul."
203	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Broad climate suitability (environmental versatility)? No] " <i>Cambucá</i> is native from the Brazilian southeast coast, between parallel 21° and 24° south in Rio de Janeiro and São Paulo states. It is a very narrow area surrounded by the Atlantic Ocean and the "Serra do Mar" mountain ridge. This is a very hot and rainy region with temperatures between 9° and 42° C and annual rainfall around 2.000 mm. However, this plant can be very well adapted to many different climates. There are well developed and good bearing trees in colder places as Petrópolis, over the hills around Rio de Janeiro (850 m in elevation and minimum temperature around 0° C) and Porto Alegre, situated 30° south and with temperatures changing from 1° to 40° C. In dryer places, as Campos or Piracicaba (annual rainfall < 1,200 mm), well-established trees can tolerate as much as 2 months of drought without irrigation. The tree thrives well in Recife, located at 8° south to the equator."
204	2006. Apel, M.A./Sobral, M./Zuanazzi, J.A./Henriques, A.T.. Essential oil composition of four <i>Plinia</i> species (Myrtaceae). <i>Flavour and Fragrance Journal</i> . 21: 565-567.	[Native or naturalized in regions with tropical or subtropical climates? Yes] " <i>P. edulis</i> (Vell.) Sobral is a tree, occurring in the coastal Atlantic Brazilian forests, ranging from Rio de Janeiro to Rio Grande do Sul."
205	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Does the species have a history of repeated introductions outside its natural range? No] "Among the numberless, native Myrtaceae fruits from Brazil, there are many that were distributed around the tropical parts of the world, such as guava, feijoa, pitanga, jaboticaba, yellow jaboticaba, grumichama, pitomba, Rio Grande cherry. Nevertheless, the cambucá, a superior fruit in my opinion, was unreasonably forgotten by the first foreigner explorers despite its qualities, as the well balanced sweet-acid flavor, the soft texture, the medium fruit size, the high pulp content and the large fruit yield. Even in Brazil, there are very little people who know it. We can find some trees called "Cambucaseiros" only in a few rare fruit growers' orchards and in some botanic gardens. It was a very usual fruit at the Rio de Janeiro markets 60 years ago but today it disappeared due to devastation of its natural environment...There is very little information about the existence of specimens growing outside Brazil. To my knowledge, it is an almost unknown fruit in the United States. Some specialized books give very few information, using no more than 5 lines to describe it. There are some young seedlings planted in 1993 growing in Florida (Fruit & Spice Park and Bill Whitman), in Hawaii (Frankie's Sekiya Nursery) and in Sydney (Hans Muller). Even in subtropical areas, they showed to be cold hardy during the winter."
301	2005. Wagner, W.L./Herbst, D.R./Lorence, D.H.. Flora of the Hawaiian Islands website. Smithsonian Institution, Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm	[Naturalized beyond native range? No] No evidence in the Hawaiian Islands
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence

302	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence
303	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence
401	1997. Landrum, L.R./Kawasaki, M.L.. The genera of Myrtaceae in Brazil: an illustrated synoptic treatment and identification keys. <i>Brittonia</i> . 49(4): 508-536.	[Produces spines, thorns or burrs? No] "Plinia L.--Trees or shrubs; hairs simple; inflorescence a bracteate shoot often reduced to a glomerule, the peduncles often subtended by conspicuous persistent bracts; flowers 4-merous, usually silky pubescent; calyx closed or nearly so, tearing irregularly; ovary 2-1ocular; ovules usually 2 per locule; fruit crowned by remnants of the calyx; seeds 1-2; seed coat membranous; embryo with 2 separate, piano-convex cotyledons." [No evidence in genus]
402	2011. WRA Specialist. Personal Communication.	[Allelopathic? Unknown] Unlikely, as this is a tree cultivated for its edible fruit, but little information is available on the ecology of this species.
403	2011. Fruitipedia. Cambuca (Plinia edulis). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Parasitic? No] "Cambucá is a very slow growing, evergreen tree, reaching usually from 5 to 12 m high. The short trunk (30% of the total height), 30 to 50 cm in diameter, has a wide and dense crown of slender, spreading branches. As many other plants from its family, it has a smooth, thin, pale brownish gray outer bark easily peeled off in large flakes to show the coppery layer below."
404	2006. Apel, M.A./Sobral, M./Zuanazzi, J.A./Henriques, A.T.. Essential oil composition of four Plinia species (Myrtaceae). <i>Flavour and Fragrance Journal</i> . 21: 565-567.	[Unpalatable to grazing animals? Unknown] "In the present investigation of Plinia species, the chemical compositions of the volatile oils from P. cauliflora, P. cordifolia, P. edulis and P. trunciflora were analysed." [Chemical compounds in leaves may deter browsing or grazing]
405	2008. Ishikawa, T./dos Santos Donatini, R./Collantes Diaz, I.E./Yoshida, M./Bacchi, E.M./Kato, E.T.M.. Evaluation of gastroprotective activity of Plinia edulis (Vell.) Sobral (Myrtaceae) leaves in rats. <i>Journal of Ethnopharmacology</i> . 118: 527-529.	[Toxic to animals? No] "No toxicity effects were observed in mice treated with 5 g/kg p.o. of LE. Compared with controls, no significant alterations in water or food consumption or body weight were seen in treated animals during the experiment. No significant differences were found in kidney, liver, lungs, or heart weight between treated animals and controls. No macroscopic differences between organs of treated and control animals were observed." [No evidence from laboratory experiments]
405	2011. WRA Specialist. Personal Communication.	[Toxic to animals? No] No anecdotal evidence from horticultural community
406	2005. Raga, A./Machado, R.A./Francisco de Souza Filho, M./Eidi Sato, M./Cássio Siloto, R.. Tephritoidea (Diptera) species from Myrtaceae fruits in the State of São Paulo, Brazil. <i>Entomotropica</i> . 20(1): 11-14.	[Host for recognized pests and pathogens? A potential host of fruit flies] "A field survey was conducted from August 1997 to January 2003 to identify the Tephritoidea diversity from 15 Myrtaceae species (including guavas) collected in the State of São Paulo, Brazil. A total of 38,386 fruits (419.93 kg) were collected from unsprayed trees. From 188 samples of fruits 25,162 puparia and 15,439 adults of Tephritoidea were recovered. Anastrepha spp. and Ceratitis capitata (Wied.) flies were obtained from 78.7% and 16.5% of the samples, respectively. About 95.8% of all flies belonged to Tephritidae (98.3% Anastrepha spp. and 1.7% C. capitata) and 4.2% belonged to Lonchaeidae (Neosilba spp.). From 14,540 specimens of Anastrepha, it was obtained 6,642 Anastrepha females identified as: A. fraterculus, A. bistrigata, A. obliqua, A. sororcula, A. zenilidae, A. striata, A. turpiniae and A. bahiensis. Anastrepha fraterculus (Wied.) was dominant. Mean infestation indices were 0.66 puparium of Tephritoidea/fruit and 59.9 puparia/kg of fruit."
406	2011. Fruitipedia. Cambuca (Plinia edulis). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Host for recognized pests and pathogens? Possibly] "The main disease is the rust caused by fungus (Puccinea cambucaae and Uredo flavidula) that covers many parts of the plant with a red golden dust of beautiful aspect. They are easily controlled. Occasionally, some trunk borer (Cratosomus undabundos and Stenomaalbella), usual in others native Myrtaceae, makes holes under the bark and long galleries downward inside the branches requiring control practices. Sometimes, a leaf caterpillar (Chrysomphabus aonidium) may attack the plant."

407	2008. Ishikawa, T./dos Santos Donatini, R./Collantes Diaz, I.E./Yoshida, M./Bacchi, E.M./Kato, E.T.M.. Evaluation of gastroprotective activity of <i>Plinia edulis</i> (Vell.) Sobral (Myrtaceae) leaves in rats. <i>Journal of Ethnopharmacology</i> . 118: 527–529.	[Causes allergies or is otherwise toxic to humans? No] " <i>Plinia edulis</i> , an arboreous species popularly known as "cambuc´ a", is native to the Brazilian Atlantic Rain Forest. Despite its traditional uses, no reports are available on the safety of this utilization or on the relationship between the antiulcer activity of its extract and its phytochemical compounds. This paper reports on the investigation of the acute toxicity and gastroprotective effect of the aqueous ethanol extract of leaves of <i>Plinia edulis</i> on HCl/ethanol induced ulcers. In order to correlate the secondary metabolites and the efficacy of the crude drug in traditional medicine, the extract was submitted to chromatographic fractionation after solvent partition. The extract did not show acute toxicity in mice treated with 5 g/kg p.o., but exhibited significant antiulcer activity in rats at doses of 100, 200, and 400 mg/kg p.o., more active than the reference drug lansoprazole. The ethyl acetate fraction yielded -amyrin, oleanolic acid, ursolic acid, and maslinic acid, which were identified based on spectrometric analyses. Since antiulcerogenic activity is not restricted to one class of compounds in plants, the triterpenoids isolated in the extract can be associated with the observed effect."
407	2008. Ishikawa, T./Kato, E.T.M./Yoshida, M./Kaneko, T.M.. Morphoanatomic aspects and phytochemical screening of <i>Plinia edulis</i> (Vell.) Sobral (Myrtaceae). <i>Brazilian Journal of Pharmaceutical Sciences</i> . 44(3): 515-520.	[Causes allergies or is otherwise toxic to humans? No] "It is well known due their juicy fruits and uses in folk medicine against stomach problems and throat affection (Nascente, 2008; Maciel, Cardoso, 2003). Although the species has been commonly used in traditional medicine, scientific reports on it are limited. This plant has been shown to exhibited gastroprotective activity (Ishikawa et al., 2003)." [No evidence]
408	1997. Landrum, L.R./Kawasaki, M.L.. The genera of Myrtaceae in Brazil: an illustrated synoptic treatment and identification keys. <i>Brittonia</i> . 49(4): 508-536.	[Creates a fire hazard in natural ecosystems? No] No evidence that species are adapted to a fire prone ecosystem
409	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "Cambuca prefers a deep, rich, well drained soil and supports full sun." [No information on shade tolerance of adult trees]
409	2011. Frutas Raras. <i>Plinia edulis</i> . http://www.bananasraras.org/frutasrarasingles/plinia.htm	[Is a shade tolerant plant at some stage of its life cycle? Possibly] "enjoy shaded environment...for at least 2 years before planting." [original in Portuguese]
410	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Tolerates a wide range of soil conditions? No] "Cambuca prefers a deep, rich, well drained soil..."
410	2011. Frutas Raras. <i>Plinia edulis</i> . http://www.bananasraras.org/frutasrarasingles/plinia.htm	[Tolerates a wide range of soil conditions? No] "The soil should be deep, moist, neutral, with sandy or clay formation" [original in Portuguese]
411	2008. Ishikawa, T./dos Santos Donatini, R./Collantes Diaz, I.E./Yoshida, M./Bacchi, E.M./Kato, E.T.M.. Evaluation of gastroprotective activity of <i>Plinia edulis</i> (Vell.) Sobral (Myrtaceae) leaves in rats. <i>Journal of Ethnopharmacology</i> . 118: 527–529.	[Climbing or smothering growth habit? No] " <i>Plinia edulis</i> (Myrtaceae) is an arboreous species that grows in Brazil from the state of Rio de Janeiro southward to Rio Grande do Sul (Lorenzi et al., 2006)."
412	2011. WRA Specialist. Personal Communication.	[Forms dense thickets? Unknown]
501	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Aquatic? No] "Cambuc´ a is a very slow growing, evergreen tree, reaching usually from 5 to 12 m high."
502	2011. Tropicos.org. Tropicos [Online Database]. Missouri Botanical Garden, http://www.tropicos.org/	[Grass? No] Myrtaceae
503	2011. Tropicos.org. Tropicos [Online Database]. Missouri Botanical Garden, http://www.tropicos.org/	[Nitrogen fixing woody plant? No] Myrtaceae
504	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Cambuc´ a is a very slow growing, evergreen tree, reaching usually from 5 to 12 m high. The short trunk (30% of the total height), 30 to 50 cm in diameter, has a wide and dense crown of slender, spreading branches. As many other plants from its family, it has a smooth, thin, pale brownish-gray outer bark easily peeled off in large flakes to show the coppery layer below."
601	1997. Landrum, L.R./Kawasaki, M.L.. The genera of Myrtaceae in Brazil: an illustrated synoptic treatment and identification keys. <i>Brittonia</i> . 49(4): 508-536.	[Evidence of substantial reproductive failure in native habitat? No] No evidence

602	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Produces viable seed? Yes] "Cambucá is generally propagated by seeds."
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	1996. Lughadha, E.N./Proenca, C.. A Survey of the Reproductive Biology of the Myrtoideae (Myrtaceae). <i>Annals of the Missouri Botanical Garden</i> . 83(4): 480-503.	[Self-compatible or apomictic? Unknown] "Outbreeding is probably widespread, although both self compatible and self-incompatible species exist. The self incompatible species have self pollen tubes penetrating the micropyles, so preferential outcrossing may be maintained by a late acting mechanism. Cryptic dioecy, in which female flowers have "mimic" sterile anthers occurs in several genera. Apomixis occurs in <i>Syzygium</i> and this has been reported to be linked to the polyembryony found in this genus" [No information on reproductive system of <i>Plinia</i>]
605	1996. Lughadha, E.N./Proenca, C.. A Survey of the Reproductive Biology of the Myrtoideae (Myrtaceae). <i>Annals of the Missouri Botanical Garden</i> . 83(4): 480-503.	[Requires specialist pollinators? Probably not] "Bee-pollination in which pollen is the sole reward is the dominant pollination system. Nectar has been best documented in <i>Syzygium</i> but probably also occurs in other bee-pollinated genera. The most common bee visitors are Apidae: Meliponinae and Bombina...Studies of genera of Myrtoideae other than <i>Syzygium</i> have generally failed to find any evidence of nectar production. Nectar is absent in flowers of southern African <i>Eugenia</i> species (van Wyk & Lowrey, 1988) and, apparently, in most South American Myrtoideae (Landrum, 1986; Proenca & Gibbs, 1994; Nic Lughadha, unpublished data). Exceptions include the report by Pirani and Cortopassi-Laurino (1993) of bees collecting pollen and nectar from flowers of <i>Plinia glomerata</i> (O. Berg) Amshoff and that of Peters and Vasquez (1986/87) on nectar production in <i>Myrciaria dubia</i> "
606	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Reproduction by vegetative fragmentation? No] "Cambucá is generally propagated by seeds." [No evidence]
607	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Minimum generative time (years)? 4+] "It is a very slow growing plant. Trees 5 and 10 year old, are just 1.0 - 1.5 m and 2.0 - 3.0 m high, respectively. Young trees must be pruned to maintain the trunk cleaned up to about 70 cm...Seedlings commonly begin to flower and bear between 5 and 12 years depending mainly on the climatic conditions."
701	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Propagules likely to be dispersed unintentionally? No] "The very smooth, short stalked, globular berry is larger than most <i>Myrciaria</i> and <i>Eugenia</i> . They are green at the beginning, turning yellow to bright orange yellow when ripen, presenting many slightly raised longitudinal ridges. Some old books mention about the existence of fruits up to 9 cm large, but the trees that I know produce smaller fruits. Their size ranges from 5.0 to 7.0 cm in diameter and 4.2 to 5.5 cm in height and their weight from 55 to 140 g. Under the leathery, thin skin, there is a soft, grainless, juicy, orange-yellow, 0.4 to 0.7 cm thick flesh, similar to Peaches in texture. It involves an incredibly delicious, translucent, melting, yellow, 0.5 to 0.8 cm thick pulp that encloses one or rarely (5%) two hard, oblong, flattened, light purple seeds, easily separable from the pulp. Both, flesh and pulp, have a delicious, well balanced subacid to sweet flavor, resembling jaboticabas, grumichamas and pitombas, but without any trace of astringency or resinous aftertaste." [Large fruits and seeds with no means of external attachment]
702	2006. Apel, M.A./Sobral, M./Zuanazzi, J.A./Henriques, A.T.. Essential oil composition of four <i>Plinia</i> species (Myrtaceae). <i>Flavour and Fragrance Journal</i> . 21: 565–567.	[Propagules dispersed intentionally by people? Yes] "It is occasionally cultivated for its fruits."
703	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Propagules likely to disperse as a produce contaminant? No] "The very smooth, short stalked, globular berry is larger than most <i>Myrciaria</i> and <i>Eugenia</i> . They are green at the beginning, turning yellow to bright orange-yellow when ripen, presenting many slightly raised longitudinal ridges. Some old books mention about the existence of fruits up to 9 cm large, but the trees that I know produce smaller fruits. Their size ranges from 5.0 to 7.0 cm in diameter and 4.2 to 5.5 cm in height and their weight from 55 to 140 g. Under the leathery, thin skin, there is a soft, grainless, juicy, orange-yellow, 0.4 to 0.7 cm thick flesh, similar to Peaches in texture. It involves an incredibly delicious, translucent, melting, yellow, 0.5 to 0.8 cm thick pulp that encloses one or rarely (5%) two hard, oblong, flattened, light purple seeds, easily separable from the pulp." [No evidence, and unlikely due to large fruits & seeds]

704	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Propagules adapted to wind dispersal? No] "The very smooth, short stalked, globular berry is larger than most <i>Myrciaria</i> and <i>Eugenia</i> ...Their size ranges from 5.0 to 7.0 cm in diameter and 4.2 to 5.5 cm in height and their weight from 55 to 140 g. Under the leathery, thin skin, there is a soft, grainless, juicy, orange-yellow, 0.4 to 0.7 cm thick flesh, similar to Peaches in texture."
705	2011. WRA Specialist. Personal Communication.	[Propagules water dispersed? Unknown] Unknown if large fruit are buoyant
706	1996. Lughadha, E.N./Proenca, C.. A Survey of the Reproductive Biology of the Myrtoideae (<i>Myrtaceae</i>). <i>Annals of the Missouri Botanical Garden</i> . 83(4): 480-503.	[Propagules bird dispersed? Yes] "...fruit crowned by remnants of the calyx; seeds 1-2;" [Fleshy-fruited and presumably adapted for bird and/or other vertebrate dispersal, but relatively large fruits & seeds make bird dispersal in Hawaiian Islands and other island ecosystems lacking large frugivorous birds improbable]
707	1996. Lughadha, E.N./Proenca, C.. A Survey of the Reproductive Biology of the Myrtoideae (<i>Myrtaceae</i>). <i>Annals of the Missouri Botanical Garden</i> . 83(4): 480-503.	[Propagules dispersed by other animals (externally)? No. Unlikely] "...fruit crowned by remnants of the calyx; seeds 1-2;" [Fruit and seeds without means of external attachment, although fruit could hypothetically be moved by rodents or ground foraging birds for short distances]
708	1996. Lughadha, E.N./Proenca, C.. A Survey of the Reproductive Biology of the Myrtoideae (<i>Myrtaceae</i>). <i>Annals of the Missouri Botanical Garden</i> . 83(4): 480-503.	[Propagules survive passage through the gut? Probably Yes] "...fruit crowned by remnants of the calyx; seeds 1-2;" [Fleshy-fruited and presumably adapted for bird and/or other vertebrate dispersal. Could potentially be dispersed by pigs or other large mammals that consume the fruit]
801	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Prolific seed production (>1000/m ²)? No] "The very smooth, short stalked, globular berry is larger than most <i>Myrciaria</i> and <i>Eugenia</i> . They are green at the beginning, turning yellow to bright orange-yellow when ripen, presenting many slightly raised longitudinal ridges. Some old books mention about the existence of fruits up to 9 cm large, but the trees that I know produce smaller fruits. Their size ranges from 5.0 to 7.0 cm in diameter and 4.2 to 5.5 cm in height and their weight from 55 to 140 g. Under the leathery, thin skin, there is a soft, grainless, juicy, orange-yellow, 0.4 to 0.7 cm thick flesh, similar to Peaches in texture. It involves an incredibly delicious, translucent, melting, yellow, 0.5 to 0.8 cm thick pulp that encloses one or rarely (5%) two hard, oblong, flattened, light purple seeds, easily separable from the pulp." [Large, few-seeded fruits]
802	2011. Fruitipedia. Cambuca (<i>Plinia edulis</i>). http://www.fruitipedia.com/cambuca%20Plinia%20edulis.htm	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Cambucá is generally propagated by seeds. They remain viable for no more than one week when kept dried or four weeks when preserved in moist sawdust or sphagnum moss."
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of <i>Plinia edulis</i>
804	2011. WRA Specialist. Personal Communication.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown]
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]