

Taxon: <i>Handroanthus serratifolius</i>	Family: Bignoniaceae
Common Name(s): ipê amarelo pau d'arco amarelo yellow ipe yellow lapacho	Synonym(s): <i>Bignonia serratifolia</i> Vahl (basionym) <i>Tabebuia serratifolia</i> (Vahl) G. <i>Tecoma serratifolia</i> (Vahl) G. Don

Assessor: Assessor	Status: Assessor Approved	End Date: 22 Mar 2014
WRA Score: 0.0	Designation: L	Rating: Low Risk

Keywords: Naturalized, Tropical Tree, Ornamental, Yellow-Flowered, Wind-dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
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)	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		
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		
407	Causes allergies or is otherwise toxic to humans		
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	n
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		
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)		
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	y
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m ²)		
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides		
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)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	No evidence

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Distribution (Fig. 61). Colombia to Bolivia, the Guianas, and southeastern Brazil. Ecologically diverse, especially in the Brazilian mata atlantica"

202	Quality of climate match data	High
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Ecologically diverse, especially in the Brazilian mata atlantica; in Amazonia mostly occurring in more or less seasonal forests on well-drained lateritic soils, but in sub-Amazonian Brazil also occurring on richer or sandy soils and even into the cerrado; near sea level to 1200 m elevation." [Elevation range exceeds 1000 m, demonstrating environmental versatility]

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Distribution (Fig. 61). Colombia to Bolivia, the Guianas, and southeastern Brazil. Ecologically diverse, especially in the Brazilian mata atlantica"

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Andreu, M.G., Friedman, M.H. and Northrop, R.J. 2012 <i>Tabebuia serratifolia</i> , Yellow Trumpet Tree. FOR303. University of Florida, IFAS Extension, Gainesville, FL. http://edis.ifas.ufl.edu/pdffiles/FR/FR37100.pdf . [Accessed 21 Mar 2014]	"This deciduous tree is native to South and Central America, and has been introduced to the Caribbean islands, United States, Kenya, and India."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Liogier, A.H. & Martorell, L.F. 2000. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	"Occasionally planted and naturalized in Puerto Rico"

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
305	Congeneric weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence for <i>Handroanthus</i> . Several species of <i>Tabebuia</i> are listed as invasive

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). <i>Flora Neotropica</i> 25(2): 1-370	"Tree to 30 m tall, the branchlets terete, glabrate or inconspicuously puberulous at extreme tip. Leaves palmately 5-7-foliolate, the leaflets elliptic to narrowly elliptic-ovate, acuminate, the base rounded, the terminal leaflet to 18 cm long and 7 cm wide, lateral leaflets smaller, entire to conspicuously serrate, chartaceous, inconspicuously lepidote, otherwise mostly glabrous when mature, sometimes with a few inconspicuous simple trichomes at base of midvein above, with noticeable simple trichomes in the axils of lateral nerves beneath, these often fringing well-developed domatia (in cerrado sometimes softly simple puberulous over whole undersurface), more or less stellate or substellate-pubescently when very young, drying gray to olive; petiolules to 5 cm long, petiole to 10 cm long, usually more or less puberulous at least adaxially."

402	Allelopathic	
	Source(s)	Notes
	Souza, H.N., Cardoso, I.M., Fernandes, J.M., Garcia, F.C., Bonfim, V.R., Santos, A.C., Carvalho, A.F. & Mendonca, E.S. 2010. Selection of native trees for intercropping with coffee in the Atlantic Rainforest biome. <i>Agroforestry systems</i> , 80(1), 1-16	[Unknown, but unlikely given use as an intercropping tree] "Table 2 Family, species and common Portuguese names of native and exotic trees used in agroforestry systems, Zona da Mata, Minas Gerais, Atlantic Coastal Rainforest, Brazil" [List includes <i>Tabebuia serratifolia</i>]

403	Parasitic	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). <i>Flora Neotropica</i> 25(2): 1-370	"Tree to 30 m tall..." [Bignoniaceae]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Lopez, G. O., Terborgh, J., & Ceballos, N. 2005. Food selection by a hyperdense population of red howler monkeys (<i>Alouatta seniculus</i>). <i>Journal of Tropical Ecology</i> , 21(4): 445-450	"In contrast, a single species, <i>Tabebuia serratifolia</i> (Bignoniaceae), was preferred by Iguana howlers in all 3 y (50% in 1999, 48% in 2000 and 32% in 2001)." ... "Iguana howlers showed ... heavy reliance on a single species (<i>Tabebuia serratifolia</i>) as a foliage source." ... "Iguana howlers had greater access to young leaves because <i>Tabebuia serratifolia</i> trees were induced by frequent defoliation to flush new leaves repeatedly during a season (Feeley & Terborgh 2005, Rao et al. 2001)." [Palatable to howler monkeys]

Qsn #	Question	Answer
	Schulze, M.D. 2003. Ecology and Behavior of Nine Timber Tree Species in Para, Brazil: Links Between Species Life History and Forest Management and Conservation. PhD Dissertation. Pennsylvania State University, State College, PA	"In general, I observed low rates of stem breakage and detrimental herbivore damage. Fewer than 5% of seedlings of all species except <i>Tabebuia impetiginosa</i> evidenced structural damage due to either branchfalls or herbivores. However, in the case of <i>Tabebuia impetiginosa</i> and <i>T. serratifolia</i> , stem breakage at 1-1.3m height was a chronic problem (30% and 22 %, respectively, of all stems in gaps" ... "The fact that all stem breakage occurred between 1-1.3m height and with similar symptoms suggests that Tapir herbivory was a major factor for this genus. If so, Tapirs were selecting <i>T. impetiginosa</i> and <i>serratifolia</i> in preference to all the other planted species." [Palatable to tapirs]

405	Toxic to animals	n
	Source(s)	Notes
	Soares, Z.A., de Lucena, R.F., Ribeiro, J.E.D.S., Carvalho, T.K., Ribeiro, J.P.D.O., Guerra, N.D.S., Silva, N., Pedrosa, K.M., Coutinho, P.C., Lucena, C.M., Alves, C.A.B. & Júnior, S.P.D.S. 2013. Local Botanical Knowledge About Useful Species in a Semi-Arid Region From Northeastern Brazil. <i>Revista Gaia Scientia</i> 7(1): 80 103	"Table 2. Woody plants with a diameter at ground level \geq 3 cm, considered useful by the residents from the Capivara rural community, Solânea city (Paraíba, Northeastern Brazil). Use Categories: Ct = construction; Al = food; Cb = fuel; Fr = fodder; Me = medicinal; Ot = other; Tc = technology; Vt = veterinary; Mr = magical/religious; Or = ornament; Va = poisonous/abortive. Parts used: Tp = all parts; Ca = bark; Fl = flower; Fr = fruit; Ec = inner bark; La = Latex; Fo = leaf; Ra = root; Se = seed; Ma = wood; Ba = potato." [Tabebuia serratifolia is not listed as being toxic]
	Andreu, M.G., Friedman, M.H. and Northrop, R.J. 2012 <i>Tabebuia serratifolia</i> , Yellow Trumpet Tree. FOR303. University of Florida, IFAS Extension, Gainesville, FL. http://edis.ifas.ufl.edu/pdffiles/FR/FR37100.pdf . [Accessed]	"The bark of this genus contains the compound lapachol, which has been suggested to have anti cancer properties; however, this compound has also been found to be toxic. Additionally, the inner bark of this genus is thought to have antifungal properties." [No evidence, and unlikely that bark would be consumed in sufficient quantities]
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

Qsn #	Question	Answer
406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Orwa C., Mutua, A., Kindt R., Jamnadass, R. & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed 21 Mar 2014]	"Despite its hardness and density, <i>T. serratifolia</i> is susceptible to marine-borer attack." [Pests of wood]
	Ferreira, F.A., & Muchovej, J.J. Diseases of forest nurseries in Brazil. Pp. 17-23 in J.R. Sutherland and S.G. Glover (eds.). Proceedings of the first meeting of IUFRO Working Party 82.07-09 (Diseases and Insects in Forest Nurseries). Victoria, British Columbia. Canada, August 23-30.1990	"The most important disease of Ip6 in nurseries is a rust (<i>Prospodium bicolor</i>) which occurs only in southeastern Brazil on <i>T. serratifolia</i> . Basidiospore infection results in gall formation which severely deforms young seedlings, making them worthless. This fungus is autoecial and long-cycled and is an excellent teaching model for tropical forest rusts. The galls are initially light green in the pycnial stage and become covered with brown powdery spores during the aecial stage."

407	Causes allergies or is otherwise toxic to humans	
	Source(s)	Notes
	Algranti, E., Mendonça, E. M. C., Ali, S. A., Kokron, C. M., & Raile, V. 2005. Occupational asthma caused by Ipe (<i>Tabebuia</i> spp) dust. <i>Journal Investigational Allergology and Clinical Immunology</i> 15(1): 81-83	"Exposure to Ipe wood dust can lead to occupational asthma. The underlying mechanism should be investigated." ... "Ipe, the common name for the lapacho group of the <i>Tabebuia</i> genus, consists of about 20 species of trees and is found in Central and South America [10]. They all contain naphthoquinones. In Brazil, the main species are <i>Tabebuia ochraceae</i> , <i>Tabebuia impetiginosa</i> , <i>Tabebuia longifolia</i> and <i>Tabebuia serratifolia</i> . All are known in international trade as Ipe. They are commonly used in construction works for external structures, stairs and parquets. We are describing the case of a wood worker who developed asthma after exposure to Ipe dust."
	Andreu, M.G., Friedman, M.H. and Northrop, R.J. 2012 <i>Tabebuia serratifolia</i> , Yellow Trumpet Tree. FOR303. University of Florida, IFAS Extension, Gainesville, FL. http://edis.ifas.ufl.edu/pdf/FR/FR37100.pdf . [Accessed 21 Mar 2014]	"Pollen from this tree is moderately allergenic." [Possibly to susceptible individuals] ... "The bark of this genus contains the compound lapachol, which has been suggested to have anti cancer properties; however, this compound has also been found to be toxic. Additionally, the inner bark of this genus is thought to have antifungal properties." [Unlikely that bark would be consumed in sufficient quantities]

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). <i>Flora Neotropica</i> 25(2): 1-370	"Ecologically diverse, especially in the Brazilian mata atlantica; in Amazonia mostly occurring in more or less seasonal forests on well-drained lateritic soils, but in sub-Amazonian Brazil also occurring on richer or sandy soils and even into the cerrado; near sea level to 1200 m elevation." [No evidence of being in a particularly fire prone ecosystem]
	Tropilab Inc. 2014. <i>Tabebuia serratifolia</i> - Ipe. www.tropilab.net/wood/uruguaygreenheart.html	"Ipe is, due to its high density, naturally resistant to fire (NFPA class A fire rating and UBC Class 1 rating)" [Unlikely, due to fire resistant wood]

Qsn #	Question	Answer
409	Is a shade tolerant plant at some stage of its life cycle	n
	Source(s)	Notes
	Andreu, M.G., Friedman, M.H. and Northrop, R.J. 2012. <i>Tabebuia serratifolia</i> , Yellow Trumpet Tree. FOR303. University of Florida, IFAS Extension, Gainesville, FL. http://edis.ifas.ufl.edu/pdf/FR/FR37100.pdf . [Accessed]	"It grows best in warm and moist climates when in full sun."
	Schulze, M., Grogan, J., Landis, R. M., & Vidal, E. 2008. How rare is too rare to harvest?: management challenges posed by timber species occurring at low densities in the Brazilian Amazon. <i>Forest Ecology and Management</i> , 256 (7): 1443-1457	"Table 1 Key life history traits of six study species" [<i>Tabebuia serratifolia</i> - Seedling shade tolerance = Light-demanding]
	Mostacedo C, B., & Fredericksen, T. S. 1999. Regeneration status of important tropical forest tree species in Bolivia: assessment and recommendations. <i>Forest Ecology and Management</i> , 124(2): 263-273	"Table 1 Status of regeneration of tropical forest tree species in Bolivia" [<i>Tabebuia serratifolia</i> - Shade tolerance = I = intolerant]

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Backyard Gardener. 2014. <i>Tabebuia serratifolia</i> . www.backyardgardener.com/plantname/pda_61ae.html	"pH Range: 5.5 to 8 Soil Range: Sandy Loam to Clay Loam"
	Learn 2 Grow. 2014. <i>Handroanthus serratifolius</i> . http://www.learn2grow.com/plants/handroanthus-serratifolius/ . [Accessed 22 Mar 2014]	"Soil pH - Acidic, Neutral Soil Drainage - Well Drained Soil type - Loam, Sand"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Gentry, A.H. 1992. <i>Bignoniaceae: Part II (Tribe Tecomeae)</i> . <i>Flora Neotropica</i> 25(2): 1-370	"Tree to 30 m tall..." [Bignoniaceae]

412	Forms dense thickets	y
	Source(s)	Notes
	Orwa C., Mutua, A., Kindt R., Jamnadass, R., & Anthony, S. 2009 <i>Agroforestry Database: a tree reference and selection guide</i> version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed 21 Mar 2014]	"It forms pure stands in some areas but prefers the sides and tops of ridges to swampy ground."

501	Aquatic	n
	Source(s)	Notes

Qsn #	Question	Answer
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Ecologically diverse, especially in the Brazilian mata atlantica; in Amazonia mostly occurring in more or less seasonal forests on well-drained lateritic soils, but in sub-Amazonian Brazil also occurring on richer or sandy soils and even into the cerrado; near sea level to 1200 m elevation"
502	Grass	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Tree to 30 m tall..." [Bignoniaceae]
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Tree to 30 m tall..." [Bignoniaceae]
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Tree to 30 m tall..." [Bignoniaceae]
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"This is a very widespread and variable species." [No evidence]
602	Produces viable seed	y
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"...seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline- membranaceous in outer half, brownish at base, sharply demarcated from darker seed body."
	Carvalho, M. L. M. D., Nery, M. C., Oliveira, L. M. D., Hilhorst, H. W., & Guimarães, R. M. 2008. Morphophysiological development of <i>Tabeluia serratifolia</i> Vahl Nich. seeds. Scientia Agricola, 65(6): 643-651	"The propagation of <i>T. serratifolia</i> occurs through seeds, which present problems of germination and conservation (Oliveira, 2004). The seed germination is extremely variable and may differ among seed lots, according to their different origins, collections and processing systems and storage methods, which can result in considerable losses in seedling production from forest nurseries (Maeda & Matthes, 1984; Figliolia et al., 1988; Kageyama et al., 1992). The germination process may be influenced by seed formation conditions while the production conditions, including climate, phytosanitation and physiological aspects determine the seed lot quality (Barbedo & Cicero, 2000)."

Qsn #	Question	Answer
603	Hybridizes naturally	
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Several forms of <i>T. ochracea</i> that I have not formally recognized taxonomically deserve special mention" ... "It is possible that this group of collections represents hybrid introgression with <i>T. serratifolia</i> or <i>T. umbellate</i> ." [Possibly hybridization]

604	Self-compatible or apomictic	n
	Source(s)	Notes
	Alves, M. F., Duarte, M. O., Oliveira, P. E., & Sampaio, D. S. 2013. Self-sterility in the hexaploid <i>Handroanthus serratifolius</i> (Bignoniaceae), the national flower of Brazil. <i>Acta Botanica Brasilica</i> , 27(4), 714-722	"We found that <i>Handroanthus serratifolius</i> presented self-sterility in hexaploid, monoembryonic and presumably non-apomictic plants. This result is new to Bignoniaceae, because the neopolyploid species of <i>Anemopaegma</i> and <i>Handroanthus</i> studied to date are clearly self-compatible (Bittencourt & Semir 2005; Bittencourt & Moraes 2010; Firetti-Leggieri et al. 2013; Sampaio et al. 2013a)."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Alves, M. F., Duarte, M. O., Oliveira, P. E., & Sampaio, D. S. 2013. Self-sterility in the hexaploid <i>Handroanthus serratifolius</i> (Bignoniaceae), the national flower of Brazil. <i>Acta Botanica Brasilica</i> , 27(4), 714-722	"Centridini and Euglossini bees were effective pollinators of <i>H. serratifolius</i> , being considered the main pollinators of the family (Bittencourt & Semir 2004; Correia et al. 2005; Gottsberger & Silberbauer-Gottsberger 2006; Yanagizawa & Maiomni-Rodella 2007; Guimarães et al. 2008)."
	Thomas, V. & Dave, Y. 1992, Structure and biology of nectaries in <i>Tabebuia serratifolia</i> Nichols (Bignoniaceae). <i>Botanical Journal of the Linnean Society</i> , 109(3): 395–400	" <i>Tabebuia</i> has both floral and extrafloral nectaries, situated on the petiole, bract, calyx, around the ovary and on the pericarp. The floral nectary present around the ovary base is differentiated into epidermis, secretory zone and sub-secretory zone. It is supplied by phloem strands up to the secretory zone. A mature extrafloral nectary consists of a single large basal cell and a head comprising a layer of vertically arranged elongated cells. Starch, protein and lipid are present in the floral nectary. The major insect visitors to both types of nectaries are honey bees, houseflies and ants."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Carvalho, M. L. M. D., Nery, M. C., Oliveira, L. M. D., Hilhorst, H. W., & Guimarães, R. M. 2008. Morphophysiological development of <i>Tabebuia serratifolia</i> Vahl Nich. seeds. <i>Scientia Agricola</i> , 65(6): 643-651	"The propagation of <i>T. serratifolia</i> occurs through seeds, which present problems of germination and conservation (Oliveira, 2004)." [No evidence]

Qsn #	Question	Answer
607	Minimum generative time (years)	
	Source(s)	Notes
	Wadsworth, F.H. 1999. Montane Forest Management in the Insular Caribbean. General Technical Report IITF-GTR-8. USDA Forest Service, International Institute. Río Piedras, Puerto Rico	"Table 4—Useful trees native to the mountain forests" [Tabebuia serratifolia (Vahl.) Nichols - Growth rate = R (rapid)] [Time to maturity unknown]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body" [Unlikely, as capsules and seeds are relatively large and lack means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Andreu, M.G., Friedman, M.H. and Northrop, R.J. 2012 Tabebuia serratifolia, Yellow Trumpet Tree. FOR303. University of Florida, IFAS Extension, Gainesville, FL. http://edis.ifas.ufl.edu/pdf/FR/FR37100.pdf . [Accessed 21 Mar 2014]	"This deciduous tree is native to South and Central America, and has been introduced to the Caribbean islands, United States, Kenya, and India. It grows best in warm and moist climates when in full sun."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body" [Unlikely, as capsules and seeds are relatively large and probably would not become an inadvertent contaminant of produce]

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes

Qsn #	Question	Answer
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body."
	Schulze, M., Grogan, J., Landis, R. M., & Vidal, E. 2008. How rare is too rare to harvest?: management challenges posed by timber species occurring at low densities in the Brazilian Amazon. Forest Ecology and Management, 256 (7): 1443-1457	"Table 1 Key life history traits of six study species" [Tabebuia serratifolia - Seed dispersal = Wind]

705	Propagules water dispersed	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body." [Although water may provide secondary dispersal, seeds are primarily adapted for wind dispersal]

706	Propagules bird dispersed	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body" [Not fleshy-fruited]
	Sanz, V., & Grajal, A. 1998. Successful Reintroduction of Captive Raised Yellow-Shouldered Amazon Parrots on Margarita Island, Venezuela. Conservation Biology, 12(2): 430-441	"Table 1. List of food items offered to Yellow-shouldered Amazon (<i>A. barbadensis</i>) during the captive period" [Tabebuia serratifolia - Part eaten = seed] [Parrots act as seed predators rather than dispersers]

Qsn #	Question	Answer
707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body." [Fruit and seeds lack means of external attachment]

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Gentry, A.H. 1992. Bignoniaceae: Part II (Tribe Tecomeae). Flora Neotropica 25(2): 1-370	"Fruit a linear capsule, (8-)12-60 cm long, 1.6-2.4 cm wide, more or less glabrate, usually with a few widely scattered lepidote trichomes and sometimes a very few simple or stellate ones, the valves thick, subwoody, smooth or with a few scattered warty lumps; seeds bialate, 0.8-1.1 cm long, 2.4-3.5 cm wide, the wings hyaline-membranaceous in outer half, brownish at base, sharply demarcated from darker seed body." [Unlikely to be consumed, and adapted for wind dispersal]

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Schulze, M.D. 2003. Ecology and Behavior of Nine Timber Tree Species in Para, Brazil: Links Between Species Life History and Forest Management and Conservation. PhD Dissertation. Pennsylvania State University, State College, PA	"Table 3.5. Fruit and fruit crop characteristics of eight tree species, Pará, Brazil." [Tabebuia serratifolia - Mean estimated fruit crop size = 200 (20,000 seeds)] [Possible, but unlikely that wind-dispersed seeds would achieve such high densities]

802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes
	World Agroforestry Center. 2014. AgroForestryTree Database - Tabebuia serratifolia. www.worldagroforestry.org/sea/Products/AFDbases/af/a/sp/SpeciesInfo.asp?SpID=1587	"Germinating capacity is maintained for a very short time."
	Orwa C., Mutua, A., Kindt R., Jamnadass, R., & Anthony, S. 2009 Agroforestry Database: a tree reference and selection guide version 4.0. http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp . [Accessed 21 Mar 2014]	"Seeds do not retain viability for long periods in storage. Storage in seed flasks at 10 deg. C have maintained seed viability the longest."

Qsn #	Question	Answer
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Mostacedo, B., Putz, F. E., Fredericksen, T. S., Villca, A., & Palacios, T. 2009. Contributions of root and stump sprouts to natural regeneration of a logged tropical dry forest in Bolivia. <i>Forest Ecology and Management</i> , 258(6): 978-985	"Stump sprouting was common after logging in the dry forest studied; 27 of the 31 species monitored at least occasionally resprouted from stumps and 19 did so frequently (Table 1). <i>Centrolobium</i> , <i>Zeyheria</i> , and <i>Tabebuia</i> were the most frequent stump sprouters" ... "Table 1 Frequency of root and stem sprouting and shade tolerance of commercial and non-commercial canopy tree species in a tropical dry forest in Bolivia." [<i>Tabebuia serratifolia</i> - Resprout type/frequency = Root = Yes/hig]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives in tropical climates
- Elevation range exceeds 1000 m
- Naturalized in Puerto Rico
- Tolerates many soil types
- Forms pure stands in some areas
- Produces wind-dispersed seeds
- Able to resprout after cutting

Low Risk Traits

- One record of naturalization, but no reports of invasiveness worldwide
- Unarmed (no spines, thorns or burrs)
- Requires full sun
- Self-incompatible
- Wind-dispersed seeds relatively large, and unlikely to be accidentally dispersed
- Seeds lose viability rapidly