Taxon: Wallaceodendron celebicum Koord. **Family:** Fabaceae

Common Name(s): banuyo **Synonym(s):** Pithecellobium williamsii Elmer

Assessor: No Assessor **Status:** Assessor Approved **End Date:** 3 Jun 2018

WRA Score: -1.0 **Designation:** L **Rating:** Low Risk

Keywords: Tropical Tree, Unarmed, Shade-Intolerant, Timber, 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	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	?
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		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
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	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	n
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		

Qsn #	Question	Answer Option	Answer
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	y
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		
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	n
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
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		
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		
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	y
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
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**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	[No evidence of domestication] "Uses. According to Foxworthy (l.e.), the wood is moderately hard and heavy, specific gravity 0.525, golden brown, with a fine grain similar to that of Albizia acle. Used for furniture, light construction, flooring, telegraph poles. Sometimes planted."

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. 2018. Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. 2018. 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**
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 1 Jun 2018]	"Native Asia-Tropical MALESIA: Indonesia, [Celebes (n.)] Philippines"
	Andam, C. P., & Parker, M. A. (2008). Origins of Bradyrhizobium nodule symbionts from two legume trees in the Philippines. Journal of Biogeography, 35(6), 1030-1039	"Wallaceodendron is endemic to the Malesian region, its range extending from North Sulawesi to the Philippine archipelago."

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 1 Jun 2018]	

203	**Broad climate suitability (environmental versatility)**	**n**
	Source(s)	**Notes**

Qsn #	Question	Answer
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Habitat & Ecology - Primary rain forest, inland and near the sea-shore; altitude 0-850 m."
	Merrill, E.D. 1923. An Enumeration of Philippine Flowering Plants. Volume 2. Bureau of Science, Manila	"In forests at low and medium altitudes."
	Lewis, G., Schrire, B., Mackinger, B. & Lock, M. (eds.). 2005. Legumes of the World. The Royal Botanic Gardens, Kew	"tropical coastal and inland rain forest, 0-850 m"

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Distribution - Malesia.- N Celebes, Philippines."
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 3 Jun 2018]	"Native Asia-Tropical MALESIA: Indonesia, [Celebes (n.)] Philippines"

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	Sometimes planted. [apparently not outside botanical gardens]
	Imada, C.T., Staples, G.W. & Herbst, D.R. 2005. Annotated Checklist of Cultivated Plants of Hawai'i. http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/. [Accessed 3 Jun 2018]	Wallaceodendron celebicum Koorders (Confirmed) Common Names: Banuyo First Collected: 1929 Locations: Harold L. Lyon Arboretum Ho'omaluhia Botanical Garden Pacific Tropical Botanical Garden (now National Tropical Botanical Garden) (Confirmed) Wahiawa Botanical Garden Waimea Arboretum & Botanical Garden"

301	Naturalized beyond native range	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

Qsn #	Question	Answer
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. 2018. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/. [Accessed 3 Jun 2018]	No evidence to date

302	Garden/amenity/disturbance weed	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date

303	Agricultural/forestry/horticultural weed	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date

304	Environmental weed	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date

305	Congeneric weed	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Distribution— Monotypic, endemic to Malesia (Philippines, N Celebes)."
	Andam, C. P., & Parker, M. A. (2008). Origins of Bradyrhizobium nodule symbionts from two legume trees in the Philippines. Journal of Biogeography, 35(6), 1030-1039	"With only a single species, the genus Wallaceodendron is endemic to the Malesian region, its range extending from North Sulawesi to the Philippine archipelago." [monotypic genus]

401	Produces spines, thorns or burrs	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Unarmed tree. Stipules not seen. Leaves bipinnate, rachis and pinnae with extrafloral nectaries; leaflets opposite."

Qsn #	Question	Answer
402	**Allelopathic**	
	Source(s)	**Notes**
	WRA Specialist. 2018. Personal Communication	Unknown. No information found

403	Parasitic	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Tree to 45 m high, bole to 31 m high and to 160 cm in diameter, sometimes buttressed at the base." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	[Unknown. No mention of use as fodder] "Uses. According to Foxworthy (I.e.) , the wood is moderately hard and heavy, specific gravity 0.525, golden brown, with a fine grain similar 10 that of Albizia acle. Used for furniture, light construction, flooring, telegraph poles. Sometimes planted."

405	Toxic to animals	n
	Source(s)	**Notes**
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	**Notes**
	Howard, F.W., Pemberton, R.W., Hodges, G.S., Steinberg, B., McLean, D. & Liu, H. 2006. Host Plant Range of Lobate Lac Scale, Paratachardina lobata, in Florida. Proceedings of the Florida State Horticultural Society 119: 398-408	"Table 1. (Continued) The host range of lobate lac scale, Paratachardina lobata, in southern Florida, species based on observations during 2002-2006, arranged in alphabetical order." [Includes Wallaceodendron celebicum. Importance at alternate host unknown]
	WRA Specialist. 2018. Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	**Notes**
	Gascon, C. N., Gascon, A. F., & Takahashi, K. (2006). Agroforestry Systems in the Philippines: Experiences and Lessons Learned in Mt. Banahaw, Hanunuo Mangyan, and some Community-based Forestry Projects. Southern Luzon Polytechnic College University of the Philippines, Los Baños	"These include the heritable characteristics of the species like acid tolerance, drought tolerance, fire tolerance, diameter size, rotation age, yield potentials and rate of growth among others. For example, in the rehabilitation of grassland areas, we should use acid tolerant, drought and fire tolerant species like ipil-ipil (Leucaena leucocephala), narra (Pterocarpus indicus) and banuyo (Wallaceodendron celebicum)." [No indication that this species carried fire]
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	[Rainforest habitat. No evidence that this species is from fire prone ecosystems, or contributes to fire risk] "Habitat & Ecology - Primary rain forest, inland and near the sea-shore; altitude 0-850 m."

409	Is a shade tolerant plant at some stage of its life cycle	n
	Source(s)	**Notes**
	Whitford, H. N. (1911). The Forests of the Philippines. Part 1. Forest Types and Products. Bulletin No. 10. Department of the Interior Bureau of Forestry, Manila	"Banuyo…is intolerant of shade and seems to thrive best in dry places."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	Unknown [grows in primary rain forest of Sulawesi, but no information on tolerance to various soil types]

411	Climbing or smothering growth habit	n
	Source(s)	**Notes**
	USDA Forest Service Forest Products Laboratory. 2018. Wood Technical Fact Sheet - Wallaceodendron celebicum. https://www.fpl.fs.fed.us. [Accessed 1 Jun 2018]	"A large tree with a short clear trunk to 30 to 40 ft; diameters 4 to 6 ft."

412	Forms dense thickets	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	Gillett, H., & Sinovas, P. (eds.). (2008). Strategies for the sustainable use and management of timber tree species subject to international trade: south east Asia. UNEP World Conservation Monitoring Centre, Cambridge, UK	"W. celebicum was reported to be very rare in northern Sulawesi, and no information on trade in the species was available from the area (ID participants, 2007)." [apparently not forming dense thickets]
	Whitford, H. N. (1911). The Forests of the Philippines. Part 1. Forest Types and Products. Bulletin No. 10. Department of the Interior Bureau of Forestry, Manila	[Scattered distribution] "Banuyo is a medium to large sized tree with a short, often irregular bole and an open crown. It is scattered throughout the molave type of .forest on the dry coastal hills."

501	Aquatic	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	[Terrestrial] "Habitat & Ecology - Primary rain forest, inland and near the sea-shore; altitude 0-850 m."

502	Grass	n
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 1 Jun 2018]	Family: Fabaceae (alt.Leguminosae) Subfamily: Caesalpinioideae Tribe: Ingeae

503	Nitrogen fixing woody plant	y
	Source(s)	**Notes**
	Andam, C. P., & Parker, M. A. (2008). Origins of Bradyrhizobium nodule symbionts from two legume trees in the Philippines. Journal of Biogeography, 35(6), 1030-1039	"Geographic affinities were analysed for nodule bacteria (Bradyrhizobium sp. Jordan) associated with two legume trees indigenous to the Philippines: Pterocarpus indicus (Papilionoideae) and Wallaceodendron celebicum (Mimosoideae)." … "Although Pterocarpus and Wallaceodendron are members of divergent legume subfamilies, it appears that both can form symbiotic interactions with multiple Bradyrhizobium strains."
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 1 Jun 2018]	Family: Fabaceae (alt.Leguminosae) Subfamily: Caesalpinioideae Tribe: Ingeae

Qsn #	Question	Answer
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**n**
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Tree to 45 m high, bole to 31 m high and to 160 cm in diameter, sometimes buttressed at the base. Branchlets terete, brownish, in the ultimate parts tomentose, glabrescent, dotted by numerous light brown lenticels."

601	**Evidence of substantial reproductive failure in native habitat**	
	Source(s)	**Notes**
	Gillett, H., & Sinovas, P. (eds.). (2008). Strategies for the sustainable use and management of timber tree species subject to international trade: south east Asia. UNEP World Conservation Monitoring Centre, Cambridge, UK	[Reasons for rarity unspecified. Possibly due to overharvesting, or land clearing] "W. celebicum was reported to be very rare in northern Sulawesi, and no information on trade in the species was available from the area (ID participants, 2007). It is listed in the Red List of the Philippines, where it was regarded as endangered (PH participants, 2007)."

602	**Produces viable seed**	**y**
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Seeds brown, suborbicular, flat, c. 13 mm in diameter, to 2 mm thick; areole c. 10 mm in diameter, pleurogram parallel to the margins, open towards the hilum, funicle thin, c. 15 mm."

603	**Hybridizes naturally**	**n**
	Source(s)	**Notes**
	Andam, C. P., & Parker, M. A. (2008). Origins of Bradyrhizobium nodule symbionts from two legume trees in the Philippines. Journal of Biogeography, 35(6), 1030-1039	"With only a single species, the genus Wallaceodendron is endemic to the Malesian region, its range extending from North Sulawesi to the Philippine archipelago." [monotypic genus]

604	**Self-compatible or apomictic**	
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	[Unknown] "Flowers uniform, pentamerous, bisexual."

605	**Requires specialist pollinators**	**n**
	Source(s)	**Notes**

Qsn #	Question	Answer
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Probably most species are bee- and/or butterfly-pollinated" [description of Mimosaceae …"Flowers uniform, pentamerous, bisexual. Calyx connate, valvate. Corolla connate, valvate."[Floral morphology suggests generalist insect pollination]

606	Reproduction by vegetative fragmentation	
	Source(s)	**Notes**
	WRA Specialist. 2018. Personal Communication	Unknown. No information found

607	Minimum generative time (years)	
	Source(s)	**Notes**
	Gascon, C. N., Gascon, A. F., & Takahashi, K. (2006). Agroforestry Systems in the Philippines: Experiences and Lessons Learned in Mt. Banahaw, Hanunuo Mangyan, and some Community-based Forestry Projects. Southern Luzon Polytechnic College University of the Philippines, Los Baños	"When the planted trees were assessed of their quarterly height growths (Table 1) the fast growers were narra, banuyo, earpod and kalumpit" [banuyo, or W. celebicum, has a fast growth rate, but age of reproductive maturity unknown]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Seeds brown, suborbicular, flat. C. 13 mm in diameter." [No evidence, no means of external attachment and relatively large seeds unlikely to be accidentally dispersed]

702	Propagules dispersed intentionally by people	y
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Used for furniture, light construction, flooring, telegraph poles. Sometimes planted."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Seeds brown, suborbicular, flat. C. 13 mm in diameter." [No evidence, and relatively large seeds unlikely to be accidentally dispersed]

704	Propagules adapted to wind dispersal	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"In Wallaceodendron the one-seeded endocarp segments are adapted to wind-dispersal (Augspurger 1989)."

705	Propagules water dispersed	
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"The peculiar envelopes of the seed, formed by the endocarp, suggest that it possibly is dispersed locally by wind or water." [Large seed pods or seeds envelopes could possibly float]

706	Propagules bird dispersed	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Seeds…without aril" [no adaptations for bird dispersal]

707	Propagules dispersed by other animals (externally)	n
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Seeds brown, suborbicular, flat. C. 13 mm in diameter." [No means of external attachment]

708	Propagules survive passage through the gut	
	Source(s)	**Notes**
	WRA Specialist. 2018. Personal Communication	[No adaptations for zoochory, & pods unlikely to be consumed] "Pods woody, flat, straight or slightly curved, tardily dehiscent, not segmented, not reddish inside; endocarp chartaceous, loosening, and at dehiscence forming small, closed envelopes around each seed. Seeds circular, flattened, unwinged, with pleurogram, without aril, testa thick, crustaceous; endosperm absent; cotyledons large." … "The peculiar envelopes of the seed, formed by the endocarp, suggest that it possibly is dispersed locally by wind or water. The genus is unique by its pod characters."

801	Prolific seed production (>1000/m2)	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"Pod…9.5-20 by 2.5-4 cm…Seeds…c. 13 mm in diameter" [large pod and seed size highly unlikely to produce seed densities >1000/m2]

802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y**
	Source(s)	**Notes**
	Nielsen, I.C. 1992. Flora Malesiana. Series I - Spermatophyta. Volume 11 - part 1 Mimosaceae (Leguminosae - Mimosoideae). Foundation Flora Malesiana. Rijksherbarium / Hortus Botanicus, Leiden University, The Netherlands	"These seeds also have a pleurogram on the outer surface. The seeds of this group have a very long dormancy, the hard seed coat protecting the embryo against desiccation, physical damage and damage by predators…In Malesia the following genera of tribe Ingeae have a hard seed coat with pleurogram: Albizia, Cathormion, Parachidendron, Paraserianthes, Samanea, Serianthes, and Wallaceodendron." [although no specific longevity information is given, this reference suggests long seed viability]

803	**Well controlled by herbicides**	
	Source(s)	**Notes**
	WRA Specialist. 2018. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	
	Source(s)	**Notes**
	Gascon, C. N., Gascon, A. F., & Takahashi, K. (2006). Agroforestry Systems in the Philippines: Experiences and Lessons Learned in Mt. Banahaw, Hanunuo Mangyan, and some Community-based Forestry Projects. Southern Luzon Polytechnic College University of the Philippines, Los Baños	"These include the heritable characteristics of the species like acid tolerance, drought tolerance, fire tolerance, diameter size, rotation age, yield potentials and rate of growth among others. For example, in the rehabilitation of grassland areas, we should use acid tolerant, drought and fire tolerant species like ipil-ipil (Leucaena leucocephala), narra (Pterocarpus indicus) and banuyo (Wallaceodendron celebicum)." [possibly fire tolerant, but unknown which trait or traits refer to Wallaceodendron]

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. 2018. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Thrives in tropical climates
• Reproduces by seeds
• Seeds dispersed by wind, possibly water & intentionally by people
• Seeds may form a persistent seed bank
• Limited ecological information may reduce accuracy of risk prediction

Low Risk Traits
• No reports of invasiveness or naturalization, but limited evidence of widespread introduction outside native range
• Unarmed (no spines, thorns, or burrs)
• Valued timber tree
• Shade-intolerant