

Family: *Fabaceae*

Taxon: *Archidendron clypearia*

Synonym: *Pithecellobium angulatum* Bentham
Pithecellobium clypearia (Jack) Bentham
Inga clypearia Jack

Common Name Archidendron

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	EVALUATE
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	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	
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	n
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	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	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	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/m2)	y=1, n=-1	
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	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: EVALUATE

WRA Score 3

Supporting Data:

101	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	No evidence of widespread domestication
201	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp.. Foundation Flora Malesiana, The Netherlands	Distribution -Tropical Asia: Ceylon & S India [subsp. subcoriaceum (Thwakes) Nielsen]; the type subspecies (with 4 varieties) in India (Sikkim), Bangladesh, Assam, Burma, S China, Thailand, Indo-China; in Malesia: throughout the region, except for the Lesser Sunda Islands and the Bismarck Archipelago. The most common & widespread species of the genus.
201	2000. Gardner S./Sidisunthorn, P./Anusarnsunthorn. V.. A field guide to Forest Trees of Northern Thailand. Kobfai Publishing Project, Bangkok. Thailand http://www.biotik.org/laos/species/a/arccl/arccl_en.html	India, Burma (Myanmar), China (South), Malesia, Thailand, Indochina, Laos (Khammouan).
201	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Forests; 500-1800 m. Fujian, Guangdong, Guangxi, Hainan, Tai-wan, Yunnan, Zhejiang [tropical Asia]
202	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Forests; 500-1800 m. Fujian, Guangdong, Guangxi, Hainan, Tai-wan, Yunnan, Zhejiang [tropical Asia]
203	2000. Gardner S./Sidisunthorn, P./Anusarnsunthorn. V.. A field guide to Forest Trees of Northern Thailand. Kobfai Publishing Project, Bangkok. Thailand http://www.biotik.org/laos/species/a/arccl/arccl_en.html	Common in all moister forest types up to 1700 m altitude. [elevation range >1000 m, environmental versatility]
203	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Forests; 500-1800 m. Fujian, Guangdong, Guangxi, Hainan, Tai-wan, Yunnan, Zhejiang [tropical Asia] [broad elevation range exceeds 1000 m, exhibiting environmental versatility]
204	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Forests; 500-1800 m. Fujian, Guangdong, Guangxi, Hainan, Tai-wan, Yunnan, Zhejiang [tropical Asia]
205	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	No evidence of repeated introductions outside its natural range
301	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	No records of naturalization
302	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	No records of weediness or invasiveness
303	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	No records of weediness or invasiveness
304	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	No records of weediness or invasiveness
305	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	No Archidendron species listed as weedy or invasive.
401	2010. eFloras. Flora of China - Archidendron. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=102468	Trees or shrubs, unarmed.
402	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp.. Foundation Flora Malesiana, The Netherlands	No evidence of allelopathy [and probably unlikely for N-fixing tree]

403	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Shrub or much-branched tree to 22 m high; bole to 14 m high, d.b.h. 10-25 cm. [not parasitic]
404	2010. WRA Specialist. Personal Communication.	No information found on palatability of species
405	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	No evidence of toxicity in genus
406	2010. WRA Specialist. Personal Communication.	Unknown [No information found on pests or pathogens]
407	1986. Anderson, E. F.. Ethnobotany of Hill Tribes of Northern Thailand. II. Lahu Medicinal Plants. Economic Botany. 40: 442-450.	Feverish children washed with concoction of leaves; also used to treat toothache. [medicinal uses, but no evidence of toxicity]
408	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Habitat & Ecology - Primary and secondary rain forest, swamp forest, peat-swamp forest, open land; on sandy soil and clayey or grey silt; altitude 0-1850 m. [unlikely to create fire hazard given rainforest habitat]
409	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	occur in primary and secondary, lowland to lower montane, evergreen forests, up to 1,650 m altitude. They thrive in swamps and riverine forests, but also on well-drained locations, and on a wide variety of soils including clay, laterite, sand, and limestone. [likely shade tolerant given wet forest habitat]
410	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	on sandy soil and clayey or grey silt;
410	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	on a wide variety of soils including clay, laterite, sand, and limestone.
411	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Trees, to 10 m tall. Branchlets angulate, densely yellow tomentose.
412	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	No evidence of thicket formation from native habitat in Malaysia
412	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	No evidence of thicket formation from native habitat in Philippines
501	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Terrestrial
502	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Fabaceae
503	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Fabaceae [Nitrogen fixing woody plant]

504	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Trees, to 10 m tall. Branchlets angulate, densely yellow tomentose. [not a geophyte]
601	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	No evidence of substantial reproductive failure in native habitat
602	2010. eFloras. Flora of China - Archidendron clypearia. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=242303963	Legume twisted, 1-1.5 cm wide, margin constricted between seeds. Seeds 4-10, black, ellipsoidal or broadly ellipsoidal, ca. 1 cm; testa wrinkled when dry.
603	2010. WRA Specialist. Personal Communication.	Potential to hybridize unknown
604	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Many species of the Mimosaceae are self-incompatible and in Acacia genetic experiments suggest that this is controlled by a gametophytic S-gene system. [but self-compatibility in Archidendron spp. Unknown]
605	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Pollinators. Probably most species are bee- and/or butterfly-pollinated...Flowers pentamerous, bisexual. Calyx light green, cup-shaped, campanulate or funnel shaped, 1-c. 3 mm, puberulous to sericeous; teeth triangular, acute, minute. Corolla creamy white or yellow, funnel-shaped or campanulate, 4-11 mm, puberulous or sericeous; lobes ovate or lanceolate, acute, 2-3 mm. Stamens creamy white or yellow, to c. 13 mm; the tube equaling the corolla-tube. Ovary solitary, puberulous or sericeous. [no evidence of specialized pollinator requirements]
606	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	Reproduction by seed [can also coppice, but no evidence of reproduction by vegetative fragmentation]
607	2004. Anusarnsunthorn, V./Elliott, S.. Long-Term Monitoring Of Biodiversity Recovery In Forest Restoration Plots In Northern Thailand (BRT 344044). Final Report to the Biodiversity Research & Training Programme. Chiang Mai University,	Archidendron clypearia: Flowers and fruits in 4th year after planting. Many tree seedlings spring up nearby from 5th year after planting.
701	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Pod orange-yellowish outside, reddish inside, flattened, spirally twisted, somewhat sinuate between the seeds, chartaceous(- subcoriaceous), to 20 cm by 1 cm, puberulous or tomentose, veins inconspicuous, dehiscing along the ventral suture and partly along the dorsal suture. Seeds black, ovoid to ellipsoid, 6-10 by 6-9 by 6-7 mm. [no means of external attachment on pods or seeds]
702	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	Propagated for a number of uses [timber, firewood, medicinal, tanning]
703	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Seeds black, ovoid to ellipsoid, 6-10 by 6-9 by 6-7 mm. [no evidence, and unlikely given fairly large seeds]
704	2006. Shono, K./Davies, S. J./Kheng, C. Y.. Regeneration of native plant species in restored forests on degraded lands in Singapore. Forest Ecology and Management. 237: 574-582.	Appendix A...Archidendron clypearia: Dispersal agent: Seeds typically dispersed by birds and/or bats (B), [no evidence of or adaptations for wind dispersal]
705	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	They thrive in swamps and riverine forests, but also on well-drained locations, and on a wide variety of soils including clay, laterite, sand, and limestone. [distribution suggests pods or seeds may be buoyant and dispersed along waterways]

706	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Ornithochory probably also plays an important role in the dispersal of Archidendron & Pararchidendron, with the bluish-black seeds contrasting with the orange-red endocarp in most species.
706	2000. Gardner S./Sidisunthorn, P./Anusarnsunthorn. V.. A field guide to Forest Trees of Northern Thailand. Kobfai Publishing Project, Bangkok. Thailand http://www.biotik.org/laos/species/a/arccl/arccl_en.html	Fruit up to 20 cm long, pod twisted into an orange-red coil with black seeds. Seeds 4-12, black, glossy.
706	2006. Shono, K.,/Davies, S. J./Kheng, C. Y.. Regeneration of native plant species in restored forests on degraded lands in Singapore. Forest Ecology and Management. 237: 574-582.	Appendix A...Archidendron clypearia: Dispersal agent: Seeds typically dispersed by birds and/or bats (B),
706	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	Seed Dispersal: 1. Animal; Diaspore is eaten intentionally; Assumption based upon diaspore morphology; (van der Pijl, 1982); Birds.; Diaspore=seed. The diaspore is mimetic of other edible diaspores.
707	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Pod orange-yellowish outside, reddish inside, flattened, spirally twisted, somewhat sinuate between the seeds, chartaceous(- subcoriaceous), to 20 cm by 1 cm, puberulous or tomentose, veins inconspicuous, dehiscing along the ventral suture and partly along the dorsal suture. Seeds black, ovoid to ellipsoid, 6-10 by 6-9 by 6-7 mm. [no evidence of external animal dispersal, & no means of external attachment]
708	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	Seed Dispersal: 1. Animal; Diaspore is eaten intentionally; Assumption based upon diaspore morphology; (van der Pijl, 1982); Birds.; Diaspore=seed. The diaspore is mimetic of other edible diaspores.
801	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	Shrub or much-branched tree to 22 m high; bole to 14 m high, d.b.h. 10-25 cm. [possibly able to produce large seed numbers, given potential to reach large size]
802	1992. Nielsen, I. C.. Mimosaceae (Leguminosae-Mimosoideae). Flora Malesiana. 11: 226 pp..Foundation Flora Malesiana, The Netherlands	In the Malesian genera Archidendron & Archidendropsis very short-lived, so-called recalcitrant seeds are found. These seeds are so short-lived that they sometimes germinate in the pod (some species of Malesian Archidendron & New Caledonian Archidendropsis). The seeds of these two genera & also of the American genera Cojoba & Zygia are often 'overgrown', as termed by Corner, & have large amounts of nutrition securing the developing seedling in everwet habitats for a long period. [seeds apparently do not persist]
802	2007. Dayan, M./Reaviles, R. S./Bandian, D. B.. Indigenous Forest Tree Species In Laguna Province. DENR Recommends. 15b: 25 pp..Department of Environment and Natural Resources College, Laguna, Philippines	Viability of most Archidendron species is only up to six months when seeds are stored at ambient temperature. Beyond seven months seeds are no longer viable.
803	2010. WRA Specialist. Personal Communication.	No information found on herbicide control methods of A. clypearia
804	2005. Kiiamaa, S.. Natural regeneration and ecological succession in Pinus kesiya watershed plantations in northern Thailand: implications for plantation management.. Department of Forest Ecology, University of Helsinki, Helsinki, Finland	Table 19. Species found to have coppicing ability and the relative abundance (%) of each species coppicing in each size class. [list includes Archidendron clypearia]
805	2010. WRA Specialist. Personal Communication.	Unknown whether effective natural enemies present locally