Family: Apocynaceae

Print Date: 7/10/2013

Wrightia antidysenterica Taxon:

Synonym: Nerium antidysentericum L. (basionym)

Common Name: snowflake artic snow Nerium zeylanicum L. milky way  $Walidda\ antidy senterica\ (L.)\ Pichon$ Easter tree Wrightia zeylanica (L.) R. Br.

 $Holarrhena\ antidy senterica\ (L.)\ Wall.$ 

Que Stat	stionaire :	current 20090513 Assessor Approved	Assessor: Data Entry Person:	Assessor	Designation: L WRA Score 0	
		——————————————————————————————————————	Data Entry Person:	Assessor	WKA Score U	
101	Is the species high	hly domesticated?			y=-3, n=0	n
102	Has the species become naturalized where grown?			y=1, n=-1		
103	Does the species h	have weedy races?			y=1, n=-1	
201		tropical or subtropical climate copical'' for ''tropical or subtr		ly wet habitat, then	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate	e match data			(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate sui	itability (environmental versa	tility)		y=1, n=0	n
204	Native or natural	ized in regions with tropical o	r subtropical climates		y=1, n=0	у
205	Does the species h	have a history of repeated intr	oductions outside its nat	tural range?	y=-2, ?=-1, n=0	y
301	Naturalized beyon	nd 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/fore	stry/horticultural weed			n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental w	reed			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 gr	razing animals			y=1, n=-1	n
405	Toxic to animals				y=1, n=0	n
406	Host for recogniz	ed pests and pathogens			y=1, n=0	n
407	Causes allergies of	or is otherwise toxic to human	s		y=1, n=0	
408	Creates a fire haz	zard in natural ecosystems			y=1, n=0	
409	Is a shade toleran	nt plant at some stage of its life	e cycle		y=1, n=0	

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcar	ic 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	
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 tub	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	
606	Reproduction by vegetative fragmentation	y=1, n=-1	
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0 4+ years = -1	,
701	Propagules likely to be dispersed unintentionally (plants growing in heavily tra areas)	fficked y=1, n=-1	
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	
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	
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	
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	
	Designat	ion: L WRA Score	0

uppor	ting Data:	
101	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Is the species highly domesticated? No] No evidence
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Species suited to tropical or subtropical climate(s) 2-High] "W. antidysenterica, is endemic to Ceylon"
202	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Quality of climate match data 2-High]
203	2013. Dave's Garden. Gardening Website. http://davesgarden.com/	[Broad climate suitability (environmental versatility)? No] "Hardiness: USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"
204	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "W. antidysenterica, is endemic to Ceylon"
205	2005. Imada, C.T./Staples, G.W./Herbst, D.R Annotated Checklist of Cultivated Plants of Hawai'i. The Bishop Museum, http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/	[Does the species have a history of repeated introductions outside its natural range?] "Locations: Waimea Arboretum & Botanical Garden "
205	2008. Sato, H.D. Specimen Details for Wrightia antidysenterica (L.) R.Br. [BISH 732938]. Bishop Museum, http://nsdb.bishopmuseum.org/2C474AEF-B5FF-47A3-9366-B6626FCD8DA6	[Does the species have a history of repeated introductions outside its natural range?] "Small shrub 4-6 ft tall, flowering year round. Original plant purchased at Koolau Farmers Kaneohe. Sold in garden and floral shops in Japan as Minato-no-hi (Harbor Lights)."
205	2009. Chong, K.Y./Tan, H.T.W./Corlett, R.T A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	[Does the species have a history of repeated introductions outside its natural range? Singapore] ]"Wrightia antidysenterica (L.) R. Br.; Apocynaceae; cultivated only"
205	2009. Middleton, D.J An update on the Apocynaceae in Thailand. Thai Forest Bulletin (Botany). Special Issue: 143–155.	[Does the species have a history of repeated introductions outside its natural range? Thailand] "Wrightia antidysenterica L. should now be included as it has become a common sight throughout Thailand."
205	2012. Nickrent, D.L./Barcelona, J./Pelser, P./Molina, J.E./Callado, J.R Co's Digital Flora of the Philippines. http://www.philippineplants.org/	[Does the species have a history of repeated introductions outside its natural range? Philippines] "Cultivated: Wrightia antidysenterica"
205	2013. Dave's Garden. Gardening Website. http://davesgarden.com/	[Does the species have a history of repeated introductions outside its natural range? Florida] "This plant has been said to grow in the following regions: Big Pine Key, Florida Boca Del Mar, Florida Marathon Shores, Florida Pembroke Pines, Florida"
301	2007. Middleton, D.J A new species of Wrightia (Apocynaceae: Apocynoideae) from Thailand. Thai Forest Bulletin (Botany). 35: 80–85.	[Naturalized beyond native range? No evidence in Thailand] "There are now a total of 12 species of Wrightia known from Thailand, one of which, W. antidysenterica (L.) R.Br., is only known from cultivation." "In addition to these wild species Wrightia antidysenterica, native to Sri Lanka, has become very widely cultivated in Thailand since 1999."
301	2012. Randall, R.P A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Naturalized beyond native range? No evidence]
302	2009. Nursery & Garden Industry Australia. Grow Me Instead - A Guide for Gardeners in Queensland Sub Tropics. http://www.growmeinstead.com.au/public/GMI-brochure-Qld-Sub-Tropics.pdf	[Garden/amenity/disturbance weed? No evidence] "Beautiful compact evergreen perennial shrub growing up to 1.5m. It has glossy green leaves and is covered in 2.5cm white star shaped flowers throughout the warmer months. A relatively new release well worth trying." [Recommended as a non invasive alternative to Catharanthus roseus and Ochna serrulata]
302	2012. Randall, R.P A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No] No evidence

303	2012. Randall, R.P A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No] No evidence	
304	2012. Randall, R.P A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No] No evidence	
305	2012. Randall, R.P A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No] No evidence	
401	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Produces spines, thorns or burrs? No] "Small shrubs as much as 2 m. high; branchlets gray to dark brown, lenticellate and glabrous. Leaves obovate to elliptic, occasionally narrowly elliptic, acuminate to caudate-acuminate at the apex, acute at the base, 3-10 cm. long, 1.5-3.5 cm. broad, membranaceous to subcoriaceous, glabrous even when immature, the midrib more or less elevated above, prominent beneath, the secondary veins 6-9 pairs, arcuate, sometimes obscure above, conspicuous beneath; petiole 2-3 mm. long, glabrous to minutely puberulent."	
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]	
403	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Parasitic? No] "Small shrubs as much as 2 m. high" [Apocynaceae]	
404	1997. Thapa, B./Walker, D.H./Sinclair, F.L Indigenous knowledge of the feeding value of tree fodder. Animal Feed Science and Technology. 68(1–2): 37-54.	[Unpalatable to grazing animals? No] "Table 1. Trees, shrubs and bamboos cultivated for fodder on farms and their key characteristics" [Wrightia antidysenterica - Palatable for (of cattle, buffalo, goats and sheep) = Goats and sheep]	
405	1997. Thapa, B./Walker, D.H./Sinclair, F.L Indigenous knowledge of the feeding value of tree fodder. Animal Feed Science and Technology. 68(1–2): 37-54.	[Toxic to animals? Palatable to goats and sheep, with no reports of toxicity]	
405	2008. Wagstaff, D.J International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No evidence]	
406	2008. John&Jacq~s Garden. Wrightia antidysenterica. http://www.jaycjayc.com/wrightia-antidysenterica-snowflake/ [Accessed 09 July 2013]	[Host for recognized pests and pathogens? No] "Requires minimal pruning and it is least bothered by pests and diseases!"	
407	2008. John&Jacq~s Garden. Wrightia antidysenterica. http://www.jaycjayc.com/wrightia-antidysenterica-snowflake/ [Accessed 09 July 2013]	[Causes allergies or is otherwise toxic to humans? No evidence, but medicinal plants should be used with caution] "Besides, in India, it is considered a medicinal plant. The bark has anti-microbial and anti inflammatory properties, and is used as an adulterant for the well known drug, Holarrhena antidysenterica. The juice from its bark is used for the relief of mouth sores and its leaves are used for the treatment of several skin disorders, psoriasis and other non specific dermatitis."	
407	2013. Top Tropicals. Rare tropical plants for home and garden. http://toptropicals.com/index.htm	[Causes allergies or is otherwise toxic to humans? No evidence, but medicinal plants should be used with caution] "It is a medicinal plant in India. The bark possesses anti-microbial and anti inflammatory properties and therefore the juice extracted from it is administered for mouth sores. The leaves are used in treating several skin disorders, psoriasis, nonspecific dermatitis etc. The bark is used as an adulterant for the well known drug, Holarrhena antidysenterica."	
408	2013. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems? Unknown] No information on fire ecology of this species was found	
409	2008. John&Jacq-s Garden. Wrightia antidysenterica. http://www.jaycjayc.com/wrightia-antidysenterica-snowflake/ [Accessed 09 July 2013]	[Is a shade tolerant plant at some stage of its life cycle?] "Light: Prefers bright light or full sun; Can tolerate partial shade but will result in less flowers" [Lower light may reduce flowering and limit ability to spread]	
410	1982. Everett, T.H The New York Botanical Garden Illustrated Encyclopedia of Horticulture. Garland Publishing, Inc., New York, NY	[Tolerates a wide range of soil conditions? Yes] "Wrightias are attractive for landscape plantings in the humid tropics and warm subtropics and for cultivation in any reasonably fertile, well drained soil in sun or light shade and are easily propagated by seed and by cuttings." [Genus description]	
410	2013. Dave's Garden. Gardening Website. http://davesgarden.com/	[Tolerates a wide range of soil conditions?] "Soil pH requirements: 5.6 to 6.0 (acidic) 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"	
411	1965. Ngan, P.T A Revision of the Genus	[Climbing or smothering growth habit? No] "Small shrubs as much as 2 m. high"	

412	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Forms dense thickets? Unknown. Unlikely, but no information on ecology in native range]	
501	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Aquatic? No] "Small shrubs as much as 2 m. high] [Terrestrial]	
502	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Grass? No] Apocynaceae	
503	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Nitrogen fixing woody plant? No] Apocynaceae	
504	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Geophyte (herbaceous with underground storage organs bulbs, corms, or tubers)? No] "Small shrubs as much as 2 m. high"	
601	2013. WRA Specialist. Personal Communication.	[Evidence of substantial reproductive failure in native habitat? No] No evidence, and commonly cultivated with no indication of difficulties	
602	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Produces viable seed?] "Follicles 2, free, sometimes coherent at the tips, terete- fusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long."	
602	1982. Everett, T.H The New York Botanical Garden Illustrated Encyclopedia of Horticulture. Garland Publishing, Inc., New York, NY	[Produces viable seed? Yes] "easily propagated by seed and by cuttings." [Genus description]	
603	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Hybridizes naturally? Unknown] "W. laevis seems to hybridize with W. viridiflora occurring in Thailand." "Wrightia sikkimensis appears to hybridize with other species growing within the same range." [Natural hybridization documented within genus]	
604	1999. Lipow, S.R./Wyatt, R Floral morphology and late-acting self-incompatibility in Apocynum cannabinum (Apocynaceae). Plant Systematics and Evolution. 219: 99-109.	[Self-compatible or apomictic? Unknown, but related species is self-compatible] "Second, the breeding systems of most of the 1500 species in the Apocynaceae Juss. have not been examined. Crossing experiments have shown that Wrightia tinctoria (Reddi et al. 1979), Catharanthus roseus (Albers and van der Maesen 1994), Nerium oleander (Herrera 1991), Mandevilla amabilis (S. Lipow unpubl, data), Carissa carandas (Karale et al. 1990), and five species of Pachypodium (Anderson 1983) are self-compatible."	
605	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Requires specialist pollinators?] "The flower in Wrightia is actinomorphic, bisexual and pedicellate; size is variable, ranging from 0.7 cm. long in W. hanleyi and W. viridiflora to about 5.0 cm. long in W. antidysenterica. Flowers of most species are fragrant except those of W. tomentosa and W. viridiflora which have an unpleasant scent, to judge from the local floras and collectors' notes"	
505	2013. Dave's Garden. Gardening Website. http://davesgarden.com/	[Requires specialist pollinators? Unknown] "This plant is attractive to bees, butterflies and/or birds"	
606	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Reproduction by vegetative fragmentation? Unknown, but related species may be able to spread vegetatively] "W. tinctoria coppices well and also produces root suckers."	
607	2013. Wahat Al Sahraa Nurseries. Home > [Minimum generative time (years)? Unknown, but probably <4 years] Growth Rat Products > Shrubs > Wrightia antidysenterica Milky Way. http://www.dgnurseries.com/products_details.php? prod_id=317 [Accessed 10 July 2013]		
701	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unknown] "Follicles 2, free, sometimes coherent at the tips, terete-fusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long." [The coma, or tuft of hairs on the seed, may aid adherence to vehicles, machinery or people]	
702	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules dispersed intentionally by people? Yes] "Other species have ornamental value: W. religiosa and W. antidysenterica are widely cultivated for their beautiful and fragrant white flowers"	
703	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules likely to disperse as a produce contaminant? No. Unlikely, as seeds are relatively large and not likely to become a contaminant of produce] "Follicles 2, free, sometimes coherent at the tips, terete-fusiform, 7-15 cm. long; seeds linear,	

704	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules adapted to wind dispersal? Yes] "Follicles 2, free, sometimes coherent at the tips, terete-fusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long."
705	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules water dispersed? Unknown] "Follicles 2, free, sometimes coherent at the tips, terete-fusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long." [Buoyancy of seeds unknown]
706	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules bird dispersed? No] "Follicles 2, free, sometimes coherent at the tips, terete-fusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long." [Adapted for wind dispersal]
707	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules dispersed by other animals (externally)? Unknown] "Follicles 2, free, sometimes coherent at the tips, terete-fusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long." [The coma, or tuft of hairs on the seed, may aid adherence to fur]
708	1965. Ngan, P.T A Revision of the Genus Wrightia (Apocynaceae). Annals of the Missouri Botanical Garden. 52(2): 114-175.	[Propagules survive passage through the gut? Unknown, but not adapted for internal dispersal] "Follicles 2, free, sometimes coherent at the tips, teretefusiform, 7-15 cm. long; seeds linear, about 1 cm. long, the white coma about 2.5 cm. long."
801	2013. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m2)? Unknown] Probably No, but no information found on seed production for this species
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] Some Wrightia species have orthodox seeds which may be stored for an unspecified period of time, but no information was found for W. antidysenterica
803	2013. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2009. Orwa, C./Mutua, A./Kindt, R./Jamnadass, R./Simons, A Agroforestree Database:a tree reference and selection guide version 4.0. World Agroforestry Centre, (http://www.worldagroforestry.org/af/treedb/)	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown, but related species can coppice] "W. tinctoria coppices well and also produces root suckers."
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown] Several native and introduced Apocynaceae that could harbor pests or pathogens which might affect Wrightia antidysenterica

## **Summary of Risk Traits**

## High Risk / Undesirable Traits

- Thrives in tropical climates
- Tolerates many soil types
- Seeds, when produced, wind dispersed
- Related species known to coppice and produce root suckers (may make control of naturalizing plants difficult)
- Lack of basic biological and ecological information, and limited knowledge outside native range, makes accurate risk prediction difficult

## Low Risk / Desirable Traits

- No reports of naturalization or invasiveness to date
- Unarmed (no spines, thorns or burrs)
- Palatable to goats & sheep
- Landscaping and ornamental value (with showy flowers)