

Australia/New Zealand Weed Risk Assessment adapted for United States.

Data used for analysis published in: Gordon, D.R. and C.A. Gantz. 2008. Potential impacts on the horticultural industry of screening new plants for invasiveness. Conservation Letters 1: 227-235. Available at: <http://www3.interscience.wiley.com/cgi-bin/fulltext/121448369/PDFSTART>

<i>Acalypha siamensis</i>			
Question number	Question	Answer	Score
1.01	Is the species highly domesticated?	N	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to U.S. climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	N	0
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	Y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	?	
3.01	Naturalized beyond native range	N	-1
3.02	Garden/amenity/disturbance weed	N	0
3.03	Weed of agriculture	N	0
3.04	Environmental weed	N	0
3.05	Congeneric weed	Y	2
4.01	Produces spines, thorns or burrs	?	
4.02	Allelopathic		
4.03	Parasitic	N	0
4.04	Unpalatable to grazing animals		
4.05	Toxic to animals	N	0
4.06	Host for recognised pests and pathogens		
4.07	Causes allergies or is otherwise toxic to humans	N	0
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	N	0
4.1	Grows on one or more of the following soil types: alfisols, entisols, or mollisols	Y	1
4.11	Climbing or smothering growth habit	?	
4.12	Forms dense thickets	N	0
5.01	Aquatic	N	0
5.02	Grass	N	0
5.03	Nitrogen fixing woody plant	N	0
5.04	Geophyte	N	0
6.01	Evidence of substantial reproductive failure in native habitat	N	0
6.02	Produces viable seed	Y	1
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators		
6.06	Reproduction by vegetative fragmentation		

6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	Y	1
7.03	Propagules likely to disperse as a produce contaminant	N	-1
7.04	Propagules adapted to wind dispersal	N	-1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed		
7.07	Propagules dispersed by other animals (externally)	?	
7.08	Propagules dispersed by other animals (internally)		
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
<b>Total Score</b>			<b>3</b>

<b>Outcome</b>	<b>Accept*</b>
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\*Used secondary screen from: Daehler, C. C., J.L. Denslow, S. Ansari, and H. Kuo. 2004. A risk assessment system for screening out harmful invasive pest plants from Hawaii's and other Pacific islands. *Conserv. Biol.* 18: 360-368.

section	# questions answered	satisfy minimum?
A	10	Yes
B	6	Yes
C	9	Yes
total	25	Yes

Data collected 2008

Question number	Reference	Source data
1.01		used horticulturally, but no evidence of significant modification
1.02		
1.03		
2.01	1. PERAL NAPPFAST Global Plant Hardiness ( <a href="http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20gnd.tif">http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20gnd.tif</a> ). 2. van der Vossen, HAM and Wessel, M (2000) <i>Plant Resources of South-East Asia</i> . No. 16. Stimulants. Backhuys Publishers, Leiden. 3.	1. Global hardiness zones 10-13. 2. Native in peninsular Malaysia, Laos, Cambodia, Vietnam and Thailand. [tropical] 3. China - Fujian, Hainan; Laos; Myanmar; Thailand; Vietnam; Malaysia [tropical]. 4. Distribution: Taninthayi, Yangon.

	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895</a> ). 4. Kress, WJ, DeFilipps, RA, Farr, E, and Yin Yin Kyi, D (2003) A checklist of the trees, shrubs, herbs, and climbers of Myanmar. Contributions from the United States National Herbarium 45: 1-590.	
2.02		
2.03	1. Köppen-Geiger climate map ( <a href="http://www.hydro-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf">http://www.hydro-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf</a> ). 2. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895</a> ). 4. Kress, WJ, DeFilipps, RA, Farr, E, and Yin Yin Kyi, D (2003) A checklist of the trees, shrubs, herbs, and climbers of Myanmar. Contributions from the United States National Herbarium 45: 1-590.	1. 2 climatic regions. 2. Native in peninsular Malaysia, Laos, Cambodia, Vietnam and Thailand. 3. China - Fujian, Hainan; Laos; Myanmar; Thailand; Vietnam; Malaysia [only occurs in 2 biomes]. 4. Distribution: Taninthayi, Yangon.
2.04	1. Atlapedia Online ( <a href="http://www.atlapedia.com/online/countries/">http://www.atlapedia.com/online/countries/</a> ). 2. World Trade Press ( <a href="http://www.worldtradeppress.com/Precipitation_Ma_p_Cambodia.html">http://www.worldtradeppress.com/Precipitation_Ma_p_Cambodia.html</a> ). 3. Climate Source ( <a href="http://www.climatesource.com/cn/fact_sheets/chin_appt_xl.jpg">http://www.climatesource.com/cn/fact_sheets/chin_appt_xl.jpg</a> ).	1. For peninsular Malaysia: "Average annual precipitation for West Malaysia is 2,540 mm (100 inches)"; For Laos: "average annual precipitation varying from 1,270 mm (50 inches) to 2,290 mm (90 inches) depending on the region"; For Vietnam: "Average annual precipitation in Hanoi is 1,830 mm (72 inches) with areas in the Annamite Mountains exceeding 4,060 mm (160 inches)"; For Thailand: "Average annual precipitation varies from 1,020 mm (40 inches) to 2,030 mm (80 inches) depending on the region."; For Myanmar: "The coastal and high mountain precipitation varies between 2,500 to 5,000 mm (98 to 196 inches) annually with the interior receiving 1,000 mm (39 inches) or less." 2. Most of the country falls into the range of 49.2-98.4 inches/year, however there are small regions of 3.9-9.8 in/year, 29.5-49.2 in/year, and 98.4+ in/year. 3. For the Hainan and Fujian regions of China, the average annual precipitation is 39.4-196.9 inches/year.
2.05	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16.	1. "Currently cultivated in Thailand, Peninsular Malaysia, and Indonesia".

	Stimulants. Backhuys Publishers, Leiden. 2. Shaw, HKA (1972) The Euphorbiaceae of Siam. Kew Bulletin 26(2): 191-363.	2. "Frequently cultivated".
3.01		no evidence
3.02		no evidence
3.03		<i>no evidence</i>
3.04		no evidence
3.05	Holm, L, JV Pancho, JP Herberger, and DL Plucknett (1979) A Geographical Atlas of World Weeds. John Wiley and Sons, New York.	One serious and 5 principal weeds in 6 countries.
4.01	Phạm, Hoàng Hộ (1991) Cây cỏ Việt Nam = An illustrated flora of Vietnam. Quyển II, Tập 1. Montreal.	capsules 4 mm, prickly
4.02		
4.03	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 2. Shaw, HKA (1972) The Euphorbiaceae of Siam. Kew Bulletin 26(2): 191-363.	no description of parasitism
4.04		
4.05	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 2. Shaw, HKA (1972) The Euphorbiaceae of Siam. Kew Bulletin 26(2): 191-363.	no evidence
4.06		
4.07	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 2. Shaw, HKA (1972) The Euphorbiaceae of Siam. Kew Bulletin 26(2): 191-363.	1. "A hot infusion of dried leaves is drunk as a tea by the Thais and Malays. The leaves are also used in traditional medicine to treat fever, bowel complaints and kidney diseases; they are said to have antipyretic properties." 2. "Dried leaves used for tea". [no evidence of toxicity]
4.08		
4.09	Desert Tropicals ( <a href="http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html">http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html</a> ).	Full sun.
4.1	USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources ( <a href="http://soils.usda.gov/use/worldsoils/mapindex/order.html">http://soils.usda.gov/use/worldsoils/mapindex/order.html</a> ).	Predominantly ultisols in these regions.
4.11	van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden.	A shrub or small scrambling tree to 4 m tall.
4.12	1. Desert Tropicals ( <a href="http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html">http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html</a> ) 2. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 3. Phạm, Hoàng Hộ (1991) Cây cỏ Việt Nam = An illustrated flora of Vietnam. Quyển II, Tập 1.	1. Shrub, up to 10 feet tall. 2. A shrub or small scrambling tree to 4 m tall. 3. Shrub 1-4 m high. [Despite the fact that it grows to a significant height, there are no descriptions of this species forming dense thickets.]

	Montreal.	
5.01	1. Desert Tropicals ( <a href="http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html">http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html</a> ) 2. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 3. Phạm, Hoàng Hộ (1991) Cây cỏ Việt Nam = An illustrated flora of Vietnam. Quyển II, Tập 1. Montreal.	1. Shrub, up to 10 feet tall. 2. A shrub or small scrambling tree to 4 m tall. 3. Shrub 1-4 m high.
5.02	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895</a> ).	Euphorbiaceae
5.03	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?434895</a> ).	Euphorbiaceae
5.04	1. Desert Tropicals ( <a href="http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html">http://www.desert-tropicals.com/Plants/Euphorbiaceae/Acalypha_siamensis.html</a> ). 2. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 3. Phạm, Hoàng Hộ (1991) Cây cỏ Việt Nam = An illustrated flora of Vietnam. Quyển II, Tập 1. Montreal.	1. Shrub, up to 10 feet tall. 2. A shrub or small scrambling tree to 4 m tall. 3. Shrub 1-4 m high.
6.01		no evidence
6.02	van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden.	"It can be propagated by seed".
6.03		
6.04		
6.05		
6.06		
6.07		
7.01		
7.02	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 2. Shaw, HKA (1972) The Euphorbiaceae of Siam. Kew Bulletin 26(2): 191-363.	1. "Currently cultivated in Thailand, Peninsular Malaysia, and Indonesia". 2. "Frequently cultivated".
7.03		no evidence
7.04	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16. Stimulants. Backhuys Publishers, Leiden. 2. Phạm, Hoàng Hộ (1991) Cây cỏ Việt Nam = An illustrated flora of Vietnam. Quyển II, Tập 1. Montreal.	1. "Fruit a capsule, 2.5 mm long, covered with long protuberances". 2. "Capsules 4 mm, prickly". [no adaptations to wind dispersal]
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7.06		
7.07	1. van der Vossen, HAM and Wessel, M (2000) Plant Resources of South-East Asia. No. 16.	1. "Fruit a capsule, 2.5 mm long, covered with long protuberances". 2.

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7.08		
8.01		
8.02		
8.03		
8.04		
8.05		