

Family: *Apocynaceae*

Taxon: *Telosma cordata*

Synonym: *Asclepias cordata* Burm. f. (basionym)
Pergularia odoratissima (Lour.) Sm.
Telosma odoratissima (Lour.) Coville

Common Name: Chinese violet
Fragrant telosma
Pakalana

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: L
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score -4
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	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	y
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	
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		y=1, n=0	n
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	y
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)		y=1, n=0	n

411	Climbing or smothering growth habit	y=1, n=0	y
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	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	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	y
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 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	
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	
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	

Designation: L

WRA Score -4

Supporting Data:

101	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is the species highly domesticated? No] No evidence
101	2006. Wiart, C.. Medicinal plants of Asia and the Pacific. CRC Press, Boca Raton, FL	[Is the species highly domesticated? No] No evidence
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2006. Wiart, C.. Medicinal plants of Asia and the Pacific. CRC Press, Boca Raton, FL	[Species suited to tropical or subtropical climate(s) 2-High] "...a woody climber that grows a length of 10 m in the rain forests of China, India, Kashmir, Burma, Pakistan, and Vietnam."
202	2006. Wiart, C.. Medicinal plants of Asia and the Pacific. CRC Press, Boca Raton, FL	[Quality of climate match data? 2-High] "...a woody climber that grows a length of 10 m in the rain forests of China, India, Kashmir, Burma, Pakistan, and Vietnam."
203	2012. Dave's Gardern. PlantFiles: Pakalana Vine - <i>Telosma cordata</i> . http://davesgarden.com/guides/pf/go/60783/	[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)" "...I live at 850' alt. on the Island of Hawaii....and am struggling to grow this vine. I have read that it is best grown at sea level and think this may be the reason I am having trouble. We are 3-4deg. cooler than sea level and our nights are definitely cooler." [Second quote is a comment from a grower in Hawaii]
204	2006. Wiart, C.. Medicinal plants of Asia and the Pacific. CRC Press, Boca Raton, FL	[Native or naturalized in regions with tropical or subtropical climates? Yes] "...a woody climber that grows a length of 10 m in the rain forests of China, India, Kashmir, Burma, Pakistan, and Vietnam."
205	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Does the species have a history of repeated introductions outside its natural range? Yes] "...native from India to Southeast Asia but is widely if not commonly cultivated in the tropics for its flowers, sometimes used in leis."
205	2012. Dave's Gardern. PlantFiles: Pakalana Vine - <i>Telosma cordata</i> . http://davesgarden.com/guides/pf/go/60783/	[Does the species have a history of repeated introductions outside its natural range? Yes] "This plant has been said to grow in the following regions: Glendale, Arizona Tempe, Arizona Parker, Colorado Brandon, Florida Kendall, Florida Miami, Florida (2 reports) Pembroke Pines, Florida Rockledge, Florida Honolulu, Hawaii Kihei, Hawaii De Ridder, Louisiana Lake Charles, Louisiana Spring, Texas"
301	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Naturalized beyond native range? No] "It is thought that <i>T. cordata</i> was introduced to Hawaii by immigrants from southern China between 1823 and 1864." [No evidence of naturalization]
301	2005. Wagner, W.L./Herbst, D.R./Lorence, D.H.. Flora of the Hawaiian Islands website. Smithsonian Inst., Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm	[Naturalized beyond native range? No evidence from Hawaiian Islands]
301	2007. McCormack, G.. Cook Islands Biodiversity Database, Version 2007.2.. Cook Islands Natural Heritage Trust, Rarotonga http://cookislands.bishopmuseum.org	[Naturalized beyond native range? No evidence from Cook Islands] "Cook Islands STATUS: Introduced - Recent, Not naturalised; Land, lowlands"
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
301	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	[Naturalized beyond native range? No evidence from Singapore] " <i>Telosma cordata</i> (Burm. f.) Merr.; Apocynaceae; cultivated only"
302	2007. Randall, R./Reitano, R.. New Weeds CRC publication lists over 28,000 introduced plant species and their weed status. <i>Weed Watch</i> . 16(2): 2-3.	[Garden/amenity/disturbance weed? No] "The introduced flora of Australia and its weed status includes photos of non-weedy alternatives. Clockwise from top left: <i>Begonia odorata</i> , <i>Gardenia brighamii</i> , <i>Sadleria cyatheoides</i> , <i>Impatiens hawkeri</i> , <i>Telosma cordata</i> and <i>Kalanchoe thyrsiflora</i> ." [Considered a non-invasive alternative in Australia]
302	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence

302	2012. Learn 2 Grow. <i>Telosma cordata</i> . http://www.learn2grow.com/plants/telosma-cordata/	[Garden/amenity/disturbance weed? No] "Invasive: No" [No evidence]
303	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence
401	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Produces spines, thorns or burrs? No] "Stems 1–10 m, yellowish green, pubescent when new, those of previous year pale gray, glabrescent, usually sparsely lenticellate. Petiole 1.5–5 cm; leaf blade ovate, 4–12 x 3–10 cm, base deeply cordate with narrow sinus, apex acuminate; basal veins 3, lateral veins to 6 pairs."
402	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Allelopathic? Unknown] No evidence
403	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Parasitic? No] "Lianas. Leaves opposite, long petiolate." [Apocynaceae; formerly Aslepiadaceae]
404	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Unpalatable to grazing animals? No] "The leaves and flowers are eaten throughout its native range." [Consumed by humans, so presumably palatable to ungulates]
405	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Toxic to animals? No] "The leaves and flowers are eaten throughout its native range." [No evidence. Consumed by humans, so presumably palatable to ungulates]
406	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Host for recognized pests and pathogens? No] "Pests are few: spider mites can seriously deform the foliage and can be sprayed with wettable sulfur or Kelthane; scale insects, less often a serious problem, are treatable with malathion. Stinkbugs may cause flower buds to abort." [All are widespread pests of multiple hosts in the Hawaiian Islands]
406	2008. Dau, V.T./Tran, C.V./Pham, L.T./Phan, H.T./Dang, H.L./Burgess, L.W.. Stem and root rot of <i>Telosma cordata</i> caused by <i>Phytophthora palmivora</i> in Vietnam – a newly recognised disease. Australasian Plant Disease Notes. 3: 135–137.	[Host for recognized pests and pathogens? Potentially in Vietnam] "Abstract. Severe losses of plants in crops of <i>Telosma cordata</i> occurred in Nam Dan District, Nghe An Province, Vietnam, following prolonged wet weather in September 2007. <i>Phytophthora palmivora</i> was isolated consistently from the margin of diseased and healthy tissue in underground stems. Koch's Postulates were fulfilled. This is the first report of this disease."
407	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Causes allergies or is otherwise toxic to humans? No] "The leaves and flowers are eaten throughout its native range."
407	2006. Wiart, C.. Medicinal plants of Asia and the Pacific. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2012. Dave's Gardern. PlantFiles: Pakalana Vine - <i>Telosma cordata</i> . http://davesgarden.com/guides/pf/go/60783/	[Causes allergies or is otherwise toxic to humans? No] "Danger: N/A"
408	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Creates a fire hazard in natural ecosystems? No] No evidence
408	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Creates a fire hazard in natural ecosystems? No] No evidence
409	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is a shade tolerant plant at some stage of its life cycle? No] "Pakalana prefers full sun and does well in hot, dry, low-elevation areas of the islands."
409	2012. Dave's Gardern. PlantFiles: Pakalana Vine - <i>Telosma cordata</i> . http://davesgarden.com/guides/pf/go/60783/	[Is a shade tolerant plant at some stage of its life cycle? No] "Sun Exposure: Full Sun"

410	2012. Dave's Gardern. PlantFiles: Pakalana Vine - <i>Telosma cordata</i> . http://davesgarden.com/guides/pf/go/60783/	[Tolerates a wide range of soil conditions? No] "Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
410	2012. Learn 2 Grow. <i>Telosma cordata</i> . http://www.learn2grow.com/plants/telosma-cordata/	[Tolerates a wide range of soil conditions? No] "Grow pakalana vine in full to partial sun in a fertile, moist but well-draining soil that is not alkaline." ... "Soil type - Loam, Sand"
411	1995. Wu, Z.Y./Raven, P.H. (eds.). <i>Flora of China Vol. 16 (Gentianaceae through Boraginaceae)</i> . Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Climbing or smothering growth habit? Yes] "Lianas. Leaves opposite, long petiolate."
412	1995. Wu, Z.Y./Raven, P.H. (eds.). <i>Flora of China Vol. 16 (Gentianaceae through Boraginaceae)</i> . Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Forms dense thickets? No] "Lianas" [Climbing, not thicket forming]
501	1995. Wu, Z.Y./Raven, P.H. (eds.). <i>Flora of China Vol. 16 (Gentianaceae through Boraginaceae)</i> . Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Aquatic? No] "Lianas" [Terrestrial]
502	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Apocynaceae [Formerly Asclepiadaceae]
503	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant? No] Apocynaceae [Formerly Asclepiadaceae]
504	2000. Whistler, W.A.. <i>Tropical Ornamentals: A Guide</i> . Timber Press, Portland, OR	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Distinguishable by the viny habit, clear sap, opposite, heart-shaped leaves, and short-stalked axillary umbels of five-lobed, two-toned yellow flowers."
601	1995. Wu, Z.Y./Raven, P.H. (eds.). <i>Flora of China Vol. 16 (Gentianaceae through Boraginaceae)</i> . Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1995. Wu, Z.Y./Raven, P.H. (eds.). <i>Flora of China Vol. 16 (Gentianaceae through Boraginaceae)</i> . Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Produces viable seed? Yes] "Seeds broadly ovate, ca. 1 x 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm."
602	2000. Whistler, W.A.. <i>Tropical Ornamentals: A Guide</i> . Timber Press, Portland, OR	[Produces viable seed? Yes] "Propagate by cuttings or seeds."
603	2012. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown] No evidence of hybridization found
604	2012. Learn 2 Grow. <i>Telosma cordata</i> . http://www.learn2grow.com/plants/telosma-cordata/	[Self-compatible or apomictic? Unknown] "Self-Sowing: No"
605	1997. Ollerton, J./Liede, S.. <i>Pollination systems in the Asclepiadaceae: a survey and preliminary analysis</i> . <i>Biological Journal of the Linnean Society</i> . 62: 593–610.	[Requires specialist pollinators? Yes] "In the Asclepiadaceae, at least eight pollination systems can be identified, utilizing distinct pollen vectors and with more or less specialized floral attributes. The systems are currently defined mainly by the major pollinators, rather than by reference to any pseudo-predictive 'syndrome' concept (sensu van der Pijl, 1961). These systems, together with examples of genera which contain representative species, are listed below..Night-flying moths: e.g. <i>Telosma</i> , <i>Cryptostegia</i> " [However, native and introduced night-flying moths are present in the Hawaiian Islands]
606	2005. Staples, G.W./Herbst, D.R.. <i>A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places</i> . Bishop Museum Press, Honolulu, HI	[Reproduction by vegetative fragmentation? Potentially] "...easily propagated by 3" long woody cuttings, layers, or seed. Stems that run across the ground can be covered with soil; once roots form, the connection to the mother plant can be cut and a new plant established." [No evidence that this occurs naturally]
607	2012. Learn 2 Grow. <i>Telosma cordata</i> . http://www.learn2grow.com/plants/telosma-cordata/	[Minimum generative time (years)? Unknown] "Growth Rate - Fast"
701	1995. Wu, Z.Y./Raven, P.H. (eds.). <i>Flora of China Vol. 16 (Gentianaceae through Boraginaceae)</i> . Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "Follicles lanceolate in outline, 7–13 x 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 x 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm." [Adapted for wind dispersal. Sees relatively large and not adapted for external attachment]

702	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules dispersed intentionally by people? Yes] "...native from India to Southeast Asia but is widely if not commonly cultivated in the tropics for its flowers, sometimes used in leis."
703	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules likely to disperse as a produce contaminant? No] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm." [No evidence. Adapted for wind dispersal. Sees relatively large and not likely to become a contaminant of produce]
704	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules adapted to wind dispersal? Yes] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm."
705	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules water dispersed? No] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm." [No evidence. Adapted for wind dispersal]
706	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules bird dispersed? No] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm."
707	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules dispersed by other animals (externally)? No] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm." [Adapted for wind dispersal. Sees relatively large and not adapted for external attachment]
708	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules survive passage through the gut? Unknown] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm." [Unknown.]
801	1965. Neal, M.C. In Gardens of Hawaii. Bishop Museum Press, Honolulu, HI	[Prolific seed production (>1000/m ²)? No] "The narrow, cylindrical, podlike fruits sometimes develop in Hawaii." [Suggests that seed production is limited in the islands]
801	1995. Wu, Z.Y./Raven, P.H. (eds.). Flora of China Vol. 16 (Gentianaceae through Boraginaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Prolific seed production (>1000/m ²)? Unlikely] "Follicles lanceolate in outline, 7–13 × 2–3.5 cm, glabrous, somewhat obtusely 4-angled. Seeds broadly ovate, ca. 1 × 1 cm, flat, apex truncate, margin membranous; coma 3–4 cm." [Seeds relatively large]
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]
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species.
804	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Tolerates, or benefits from, mutilation, cultivation, or fire? Possibly] "Pruning weak, spindly growth during the winter months encourages vigorous growth and better flower production when warm weather returns."
805	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown. Probably No] "Pests are few: spider mites can seriously deform the foliage and can be sprayed with wettable sulfur or Kelthane; scale insects, less often a serious problem, are treatable with malathion. Stinkbugs may cause flower buds to abort."