

**Taxon:** *Calathea zebrina* (Sims) Lindl.

**Family:** Marantaceae

**Common Name(s):** zebra plant

**Synonym(s):** *Calathea binotii* Gentil  
*Endocodon zebrina* (Sims) Raf.  
*Goeppertia zebrina* (Sims) Nees  
*Maranta zebrina* Sims  
*Phyllodes zebrina* (Sims) Kuntze

**Assessor:** Chuck Chimera

**Status:** Assessor Approved

**End Date:** 13 Oct 2016

**WRA Score:** -1.0

**Designation:** L

**Rating:** Low Risk

**Keywords:** Tropical Herb, Ornamental, Shade-Tolerant, Rhizomatous, Rarely Seeds

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	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		
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	y=1, n=0	n
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
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)		
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets		
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		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	y
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
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		
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	y
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)		
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
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	[No evidence of domestication] "The zebra plant is probably the most popular and well known calathea in cultivation."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2016. 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, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 11 Oct 2016]	"Native: Southern America Brazil: Brazil"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 11 Oct 2016]	

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"Calathea zebrine is native to the Atlantic coastal forest from sea level to 2,300' in southeastern Brazil , from the state of Bahia south to Santa Catarina." [Elevation range ca. 700 m]
	Missouri Botanical Garden. (2016). <i>Calathea zebrina</i> . <a href="http://www.missouribotanicalgarden.org/">http://www.missouribotanicalgarden.org/</a> . [Accessed 11 Oct 2016]	"Zone: 11 to 12"

204	Native or naturalized in regions with tropical or subtropical climates	y
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	" <i>Calathea zebrina</i> is native to the Atlantic coastal forest from sea level to 2,300' in southeastern Brazil, from the state of Bahia south to Santa Catarina."
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 11 Oct 2016]	"Native: Southern America Brazil: Brazil"

<b>205</b>	<b>Does the species have a history of repeated introductions outside its natural range?</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"Zebra plant is probably the most widespread of all the cultivated Marantaceae. It is found in virtually all major conservatories in Europe and North America and as a garden plant in Central and South America. Besides Hawai'i, it is cultivated in Tahiti, Western Samoa, and Rarotonga in the Pacific and in Singapore and Malaysia in Southeast Asia."

<b>301</b>	<b>Naturalized beyond native range</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Acevedo-Rodríguez, P. & Strong, M.T. 2005. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415	" <i>Calathea zebrina</i> (Sims) Lindl., a native of Brazil, is cultivated in Puerto Rico but known only to have escaped by only a single specimen record made in a ravine in wet forest at Jajome Arriba (Liogier & Liogier 30623)."
	Jaramillo Díaz, P., Guézou, A., Mauchamp, A. & Tye, A. (2011). CDF Checklist of Galapagos Flowering Plants. Charles Darwin Foundation, Puerto Ayora, Galapagos. <a href="http://www.darwinfoundation.org">http://www.darwinfoundation.org</a> . [Accessed 12 Oct 2016]	" <i>Calathea zebrina</i> ... Origin: Introduced, Cultivated]
	Guézou, A., Trueman, M., Buddenhagen, C. E., Chamorro, S., Guerrero, A. M., Pozo, P., & Atkinson, R. (2010). An extensive alien plant inventory from the inhabited areas of Galapagos. PLoS One, 5(4), e10276	"cultivated (introduced for cultivation, not naturalized)" [ <i>Calathea zebrina</i> = Cu - cultivated]
	Wagner, W.L., Herbst, D.R. & Lorence, D.H. 2016. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. <a href="http://botany.si.edu/">http://botany.si.edu/</a> . [Accessed 12 Oct 2016]	No evidence to date

<b>302</b>	<b>Garden/amenity/disturbance weed</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

<b>303</b>	<b>Agricultural/forestry/horticultural weed</b>	<b>n</b>
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

304	Environmental weed	n
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

305	Congeneric weed	
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	Possibly. Several species listed as naturalized or as weeds of unspecified impacts

401	Produces spines, thorns or burrs	n
	<b>Source(s)</b>	<b>Notes</b>
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	[No evidence] "It is a compact plant standing 1 to 3 feet high which produces 6 to 20 leaves per growth. The leaves, which measure about 6 inches in width by 12 to 24 inches in length, are rich velvety green on the upper surface with alternating bars of yellowish green and dark olive green. The undersurface is pale greyish green when young but reddish purple in the adult leaf. The petioles, which are stouter than in most of the other species, are clasping for almost their entire length and are attached to the leaf by a callused area which does not exceed 1 inch in length."

402	Allelopathic	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown

403	Parasitic	n
	<b>Source(s)</b>	<b>Notes</b>
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	"It is a compact plant standing 1 to 3 feet high which produces 6 to 20 leaves per growth." [Marantaceae. No evidence]

Qsn #	Question	Answer
404	<b>Unpalatable to grazing animals</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Dave's Garden. (2016). Zebra Plant - <i>Calathea zebrina</i> . <a href="http://davesgarden.com/guides/pf/go/56927/">http://davesgarden.com/guides/pf/go/56927/</a> . [Accessed 12 Oct 2016]	[Possibly unpalatable to deer] "On Jul 6, 2003, palmbob from Acton, CA (Zone 8b) wrote: ... Snails like it, for deer don't for some reason."

405	<b>Toxic to animals</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	California Poison Control System. 2009. Know Your Plants. <a href="http://www.calpoison.org/hcp/KNOW%20YOUR%20PLANTS-plant%20list%20for%20CPCS%2009B.pdf">http://www.calpoison.org/hcp/KNOW%20YOUR%20PLANTS-plant%20list%20for%20CPCS%2009B.pdf</a> . [Accessed 12 Oct 2016]	"Table 1. – Nontoxic Plants by Common Name" [Includes <i>Calathea zebrina</i> ]
	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	<b>Host for recognized pests and pathogens</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Missouri Botanical Garden. (2016). <i>Calathea zebrina</i> . <a href="http://www.missouribotanicalgarden.org/">http://www.missouribotanicalgarden.org/</a> . [Accessed 11 Oct 2016]	"No serious insect or disease problems. Watch for aphids, scale, mealybugs and spider mites. Leaf spots may appear."
	The Royal Horticultural Society. (2016). <i>Calathea zebrina</i> - zebra plant. <a href="https://www.rhs.org.uk/plants/details?plantid=2197">https://www.rhs.org.uk/plants/details?plantid=2197</a> . [Accessed 12 Oct 2016]	"Pests: May be attacked by glasshouse whitefly and glasshouse red spider mite Diseases: Generally disease free "

407	<b>Causes allergies or is otherwise toxic to humans</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	California Poison Control System. 2009. Know Your Plants. <a href="http://www.calpoison.org/hcp/KNOW%20YOUR%20PLANTS-plant%20list%20for%20CPCS%2009B.pdf">http://www.calpoison.org/hcp/KNOW%20YOUR%20PLANTS-plant%20list%20for%20CPCS%2009B.pdf</a> . [Accessed 12 Oct 2016]	"Table 1. – Nontoxic Plants by Common Name" [Includes <i>Calathea zebrina</i> ]
	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	<b>Creates a fire hazard in natural ecosystems</b>	<b>n</b>

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"native to the Atlantic coastal forest from sea level to 2,300' in southeastern Brazil" [No evidence that this is a fire prone habitat]

<b>409</b>	<b>Is a shade tolerant plant at some stage of its life cycle</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"It does best With some shade and should be protected from strong winds, since the large leaves are vulnerable to tearing."
	Missouri Botanical Garden. (2016). <i>Calathea zebrina</i> . <a href="http://www.missouribotanicalgarden.org/">http://www.missouribotanicalgarden.org/</a> . [Accessed 11 Oct 2016]	"Sun: Part shade to full shade"

<b>410</b>	<b>Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	The Royal Horticultural Society. (2016). <i>Calathea zebrina</i> - zebra plant. <a href="https://www.rhs.org.uk/plants/details?plantid=2197">https://www.rhs.org.uk/plants/details?plantid=2197</a> . [Accessed 12 Oct 2016]	"Soil Clay, Chalk, Loam; pH Acid, Alkaline, Neutral"
	Learn 2 Grow. (2016). <i>Calathea zebrina</i> . <a href="http://www.learn2grow.com/plants/calathea-zebrina/">http://www.learn2grow.com/plants/calathea-zebrina/</a> . [Accessed 12 Oct 2016]	"Soil Drainage Average Soil type Loam, Sand"

<b>411</b>	<b>Climbing or smothering growth habit</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	"It is a compact plant standing 1 to 3 feet high which produces 6 to 20 leaves per growth."

<b>412</b>	<b>Forms dense thickets</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"native to the Atlantic coastal forest from sea level to 2,300' in southeastern Brazil" [Densities unknown]

<b>501</b>	<b>Aquatic</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Terrestrial] " <i>Calathea zebrina</i> is native (0 the Atlantic coastal forest from sea level to 2,300' in southeastern Brazil..."

<b>502</b>	<b>Grass</b>	<b>n</b>
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 Oct 2016]	"Family: Marantaceae"

503	Nitrogen fixing woody plant	n
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 Oct 2016]	"Family: Marantaceae"

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	<b>Source(s)</b>	<b>Notes</b>
	The Royal Horticultural Society. (2016). <i>Calathea zebrina</i> - zebra plant. <a href="https://www.rhs.org.uk/plants/details?plantid=2197">https://www.rhs.org.uk/plants/details?plantid=2197</a> . [Accessed 12 Oct 2016]	"Calathea are evergreen rhizomatous perennials forming clumps of elliptic leaves"
	Gordon, D. R., Mitterdorfer, B., Pheloung, P. C., Ansari, S., Buddenhagen, C., Chimera, C., ... & Williams, P. A. 2010). Guidance for addressing the Australian Weed Risk Assessment questions. <i>Plant Protection Quarterly</i> , 25(2): 56-74	"This question relates to perennial plants with tubers, corms or bulbs. This question is specifically to deal with plants that have specialized organs and should not include plants merely with rhizomes/ stolons"

601	Evidence of substantial reproductive failure in native habitat	n
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. <i>A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places</i> . Bishop Museum Press, Honolulu, HI	[No evidence] "It is common in the forests of Corcovado in the midst of Rio de Janeiro."

602	Produces viable seed	y
	<b>Source(s)</b>	<b>Notes</b>
	Winters, H. F. (1952). <i>Some Large Leaved Ornamental Plants For The Tropics</i> . Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	"Propagation is by division of the underground rhizomes or by seed."

603	Hybridizes naturally	
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. <i>A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places</i> . Bishop Museum Press, Honolulu, HI	"Species tend to be self-compatible and hybrids are often possible between species in the same section of the genus."



Qsn #	Question	Answer
	Kennedy, H. (1978). Systematics and Pollination of the "closed flowered" Species of <i>Calathea</i> (Marantaceae). University of California Publications in Botany Volume 71. University of California Press, Berkeley and Los Angeles, CA	[Unknown. Natural hybrids documented in genus] "Near the La Lola Cacao Institute (Milla 28) Lim6n Province. Costa Rica. a natural hybrid between <i>C. warscewiczii</i> ; and <i>C. marantifolia</i> was found by Dr. R. L. Dressler"

604	Self-compatible or apomictic	
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Possibly Yes] "Species tend to be self-compatible and hybrids are often possible between species in the same section of the genus."

605	Requires specialist pollinators	y
	Source(s)	Notes
	Wilson, K. & Morrison, D. (eds.). 2000. Monocots: Systematics and Evolution. CSIRO Publishing, Collingwood, Australia	"How many or few pollinators visit a particular species is determined. by a variety of factors, including corolla tube length. quantity of nectar, number of flowers per inflorescence, density of the population and habitat. Widespread species. as expected. have a larger number of pollinators than more restricted ones. <i>Calathea crotalifera</i> S. Watson is an excellent example. ranging from sea level to 1600 m and from southern Mexico to Bolivia. It is known to be pollinated by three different genera of euglossine bees ( <i>Eulaema</i> , <i>Euplisia</i> , and 16 different species of <i>Euglossa</i> (R. L Dressler & C. H. Dodson. pers. comm.)), <i>Bombus</i> (Bumblebees) and a ground dwelling bee, <i>Thygater</i> . The later two genera were observed only at the higher elevations. The variation in tube length in different areas allows (he species to exploit a wider range of pollinator species and may partially explain its successful wide distribution."
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Genus requires specialized pollinators] "Euglossine bees are the main pollinators in the wild. Some species have flowers that are naturally closed at maturity but are forced open by bees, which then pollinate them."

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	"Propagation is by division of the underground rhizomes or by seed."
	Dave's Garden. (2016). Zebra Plant - <i>Calathea zebrina</i> . <a href="http://davesgarden.com/guides/pf/go/56927/">http://davesgarden.com/guides/pf/go/56927/</a> . [Accessed 12 Oct 2016]	"Propagation Methods: By dividing rhizomes, tubers, corms or bulbs (including offsets)"

Qsn #	Question	Answer
607	<b>Minimum generative time (years)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Time to first flowering unknown, but plants may be able to reproduce vegetatively at an earlier age
701	<b>Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Generic description. Seeds, if produced in cultivation, lack means of external attachment] "Capsule 3-seeded. Seed aril basal, white (rarely colored)."
702	<b>Propagules dispersed intentionally by people</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"Zebra plant is probably the most widespread of all the cultivated Marantaceae. It is found in virtually all major conservatories in Europe and North America and as a garden plant in Central and South America. Besides Hawai'i, it is cultivated in Tahiti, Western Samoa, and Rarotonga in the Pacific and in Singapore and Malaysia in Southeast Asia."
703	<b>Propagules likely to disperse as a produce contaminant</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	"Although not often seen, the violet flowers develop in a globose head that is borne on a stem which seldom exceeds 4 inches in length." [No evidence. Rarely flowers & therefore presumably rarely produces seeds]
704	<b>Propagules adapted to wind dispersal</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Kubitzki, K. (ed.). 1998. The Families and genera of vascular plants. Volume IV. Flowering plants, Monocotyledons: Alismatanae and Commelinanae (except Gramineae). Springer-Verlag, Berlin, Heidelberg, New York	"Most species with arillate seeds are probably myrmecochorous."
705	<b>Propagules water dispersed</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Kubitzki, K. (ed.). 1998. The Families and genera of vascular plants. Volume IV. Flowering plants, Monocotyledons: Alismatanae and Commelinanae (except Gramineae). Springer-Verlag, Berlin, Heidelberg, New York	[Unknown. Seeds, if produced, might possibly be dispersed if occurring near riparian areas] "Most species with arillate seeds are probably myrmecochorous."
706	<b>Propagules bird dispersed</b>	<b>n</b>

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"Most species in the Hawaiian Islands rarely set fruit unless hand-pollinated."
	Kubitzki, K. (ed.). 1998. The Families and genera of vascular plants. Volume IV. Flowering plants, Monocotyledons: Alismatanae and Commelinanae (except Gramineae). Springer-Verlag, Berlin, Heidelberg, New York	"Most species with arillate seeds are probably myrmecochorous."

707	Propagules dispersed by other animals (externally)	y
	<b>Source(s)</b>	<b>Notes</b>
	Kubitzki, K. (ed.). 1998. The Families and genera of vascular plants. Volume IV. Flowering plants, Monocotyledons: Alismatanae and Commelinanae (except Gramineae). Springer-Verlag, Berlin, Heidelberg, New York	"Most species with arillate seeds are probably myrmecochorous." [Likely yes, if seeds are produced]

708	Propagules survive passage through the gut	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Fruit & seeds presumably rarely produced in cultivation. Unknown if they would be consumed or survive gut passage

801	Prolific seed production (>1000/m2)	n
	<b>Source(s)</b>	<b>Notes</b>
	Winters, H. F. (1952). Some Large Leaved Ornamental Plants For The Tropics. Circular No. 35. Federal Experiment Station, USDA, Mayaguez, Puerto Rico	"Although not often seen, the violet flowers develop in a globose head that is borne on a stem which seldom exceeds 4 inches in length."
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"Most species in the Hawaiian Islands rarely set fruit unless hand-pollinated."
	The Royal Horticultural Society. (2016). <i>Calathea zebrina</i> - zebra plant. <a href="https://www.rhs.org.uk/plants/details?plantid=2197">https://www.rhs.org.uk/plants/details?plantid=2197</a> . [Accessed 12 Oct 2016]	"spikes of small flowers are seldom produced in cultivation"

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	<b>Source(s)</b>	<b>Notes</b>
	Dalling, J. W., Swaine, M. D., & Garwood, N. C. (1998). Dispersal patterns and seed bank dynamics of pioneer trees in moist tropical forest. <i>Ecology</i> , 79(2): 564-578	[Other species form a persistent seed bank] "Most seeds of <i>Calathea ovandensis</i> , a gap-dependent herb, can persist for several years in the soil under natural conditions (Horvitz and Schemske 1994)."
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Possibly] "In the wild, the seeds develop and are shed during the rainy season but do not germinate until the following rainy season, surviving the dry season in dormancy."

803	Well controlled by herbicides	

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species.

<b>804</b>	<b>Tolerates, or benefits from, mutilation, cultivation, or fire</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Learn 2 Grow. (2016). <i>Calathea zebrina</i> . <a href="http://www.learn2grow.com/plants/calathea-zebrina/">http://www.learn2grow.com/plants/calathea-zebrina/</a> . [Accessed 13 Oct 2016]	"Tall or leggy plants may be cut or pinched back to stimulate strong new growth" [Unknown. Possible that mechanical damage to rhizomes may result in resprouting]

<b>805</b>	<b>Effective natural enemies present locally (e.g. introduced biocontrol agents)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Staples, G.W. & Herbst, D.R. 2005. <i>A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places</i> . Bishop Museum Press, Honolulu, HI	[Unknown] "A popular landscaping plant in Hawai'i, zebra plant is commonly grown as a ground cover and in planters at large hotels, condominiums, and shopping malls."

**Summary of Risk Traits:**

High Risk / Undesirable Traits

- A single plant escape reported from Puerto Rico
- Thrives in tropical climates
- Shade tolerant
- Reproduces by seeds (rarely in cultivation) & vegetatively by suckers
- May be self-compatible
- Seeds, if produced, may be dispersed by ants & intentionally by people
- Seeds, if produced, may persist in the soil
- Limited ecological information may limit accuracy of risk prediction

Low Risk Traits

- No reports of invasiveness or naturalization, despite widespread cultivation outside native range
- Unarmed (no spines, thorns or burrs)
- Ornamental
- Limited fruit & seed production in cultivation
- Requires specialized pollinators
- Limited seed production reduces risk of inadvertent dispersal