

Taxon: <i>Medinilla multiflora</i> Merr.	Family: Melastomataceae
Common Name(s): malasaming Malaysian grapes Malaysian orchid	Synonym(s): <i>Medinilla myriantha</i> Merr.

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 13 Dec 2018
WRA Score: 7.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Tropical Epiphyte, House Plant, Shade-Tolerant, Self-Compatible, Bird-Dispersed

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	?
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)	y
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		
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

Qsn #	Question	Answer Option	Answer
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	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		
604	Self-compatible or apomictic	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
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		
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed		
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m ²)		
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
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	[No evidence of domestication. Cultivated as an ornamental] "Distribution-Luzon (38 coll.), Mindoro (3), Palawan (9), Panay (1), Negros (10), Carniguin de Mindanao (2). Habitat - On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude."
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	NA
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2018. 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. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 11 Dec 2018]	"Native Asia-Tropical MALESIA: Philippines [Luzon, Mindoro, Negros, Camiguin, Palawan, Panay]"
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 11 Dec 2018]	
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Habitat - On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude." [Narrow native range]
	Almost Eden. (2018). Malaysian Orchid, Malaysian Grapes. <i>Medinilla myriantha</i> . https://almostedenplants.com . [Accessed 11 Dec 2018]	"USDA Cold Hardiness Zones: 11 "

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 11 Dec 2018]	"Native Asia-Tropical MALESIA: Philippines [Luzon, Mindoro, Negros, Camiguin, Palawan, Panay]"

Qsn #	Question	Answer
205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	History of introduction unclear. A number of commercial websites, and ornamental plant books, promote the use of this plant, but often as an indoor, potted plant. It is not clear how often this plant has been cultivated outdoors in a tropical or subtropical environment

Qsn #	Question	Answer
301	Naturalized beyond native range	n
	Source(s)	Notes
	Imada, C. 2012. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Museum Technical Report 60. Bishop Museum, Honolulu, HI	No evidence to date
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date
	Wagner, W.L., Herbst, D.R. & Lorence, D.H. 2018. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/ . [Accessed 11 Dec 2018]	No evidence to date

Qsn #	Question	Answer
302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date

Qsn #	Question	Answer
303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date

Qsn #	Question	Answer
304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence to date

Qsn #	Question	Answer
305	Congeneric weed	y
	Source(s)	Notes
	USDA Natural Resources Conservation Service. 2018. Hawaii State-listed Noxious Weeds. http://plants.usda.gov/java/noxious?rptType=State&statefips=15 . [Accessed 11 Dec 2018]	Medinilla venosa is listed as a noxious weed in the state of Hawaii

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	[No evidence] "Epiphytic glabrous shrub 1-2 m high. Branches terete to quadrangular, 10 mm in diameter, bark yellowish; branchlets terete to subquadrangular, not winged, 5 mm in diameter; nodes setose, tufted with coarse bristles 10 mm long, soon deciduous with age. Leaves opposite, sessile; blades coriaceous, elliptic-oblong to oblong-ovate, 11-14 cm long, 7-8 cm wide; apices abruptly acuminate to cuspidate; bases attenuate, 5 -plinerved, occasionally 7 -plinerved and if so the marginal pair of nerves evanescent; nerves flattened on both surfaces; transverse veins distinct adaxially, absent abaxially."

402	Allelopathic	
	Source(s)	Notes
	Neal, N. (2012). <i>Gardener's Guide to Tropical Plants: Cool Ways to Add Hot Colors, Bold Foliage, and Striking Textures</i> . Cool Springs Press. Minneapolis, MN	"Grow Malaysian orchids with rattlesnake plants, impatiens, and justicia for contrasts in colors and shapes. Use them to brighten up any shady space with an edging of caladiums and impatiens in front co repeat its rosy pinks." [Allelopathic potential unknown. Ability to be grown with companion plants suggests allelopathy has not been observed or noticed with other cultivated plants]

403	Parasitic	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high." [No evidence. Melastomataceae]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. Epiphytic habit may protect from or minimize herbivore activity

405	Toxic to animals	n
	Source(s)	Notes
	Botanic Gardens Department. (1898). <i>Poisonous Plants of the Malay Peninsula</i> . <i>Agricultural Bulletin of the Malay Peninsula</i> 8: 199-218	"Some of the <i>Medinillas</i> are acid, and allied plants often astringent, but I know of none with poisonous qualities."

Qsn #	Question	Answer
	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. Some species with medicinal uses

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Hernández-Lauzardo, A. N., Lopez, P., Sanahuja, G., Suarez, S., & Palmateer, A. J. (2018). First Report of <i>Fusarium oxysporum</i> Causing Stem Rot on <i>Medinilla myriantha</i> in Florida. <i>Plant Disease</i> , 102(2), 441	" <i>Medinilla myriantha</i> , family Melastomataceae is native to the Philippines and is known as Malaysian orchid. It is an important tropical ornamental plant grown in Florida. This semiepiphytic plant produces pink flowers in the spring and summer. In March 2017, medinilla plants with stem rot were found in a nursery located in South Florida. There were over 1,000 plants, and disease incidence was around 15%. Symptoms of stem rot and defoliation were observed on the three sample plants submitted to the Plant Diagnostic Clinic in Homestead, Florida. Eight small fragments of stem tissue were surface disinfested, placed on potato dextrose agar, and incubated at 25°C for 7 days. Colonies produced white mycelia with light purple pigment that were transferred into pure culture to determine morphological characteristics (Leslie and Summerell 2006). Straight to slightly curved macroconidia with three septa were found (22.5 to 35 × 3 to 5 μm, average 30.5 × 3.52 μm). Aseptate, with elliptical shaped microconidia were observed (5 to 15 × 2.5 to 5 μm, average 8.76 × 3.14 μm). Genomic DNA was extracted from single spore isolates using the cetyltrimethyl ammonium bromide protocol (Daire et al. 1997). The complete internal transcribed spacer (ITS) region of rDNA was amplified with the primers ITS1 and ITS4, and the PCR product was sequenced. The resulting sequence was deposited in GenBank (accession no. MF069180). A BLAST search in GenBank revealed that ITS sequence matched with 100% identity only with <i>Fusarium oxysporum</i> (accession no. KU527803.2). Based on the morphological characteristics and sequence results, the fungus was identified as <i>F. oxysporum</i> . A pathogenicity test was performed on 5-week-old <i>M. myriantha</i> plants that were placed in a shade house (73% shade; temperatures; 26 to 28°C; relative humidity, 87 to 90%). Stems were injected with a hypodermic needle containing 200 μl of spore suspension (1 × 10 ⁶ spores/ml) at each inoculation point (n = 6). Control stems were injected with sterile distilled water. The pathogenicity test was repeated two times. After 10 days, the first symptoms were observed on inoculated stems as brown to black lesions. Eventually, necrotic stems and defoliation were observed. The symptoms closely matched those observed in the original plants, and <i>F. oxysporum</i> was reisolated from the lesions on inoculated stems. Control plants remained symptomless. To our knowledge, this is the first report of <i>F. oxysporum</i> causing stem rot on <i>M. myriantha</i> . This pathogen has been reported on other hosts as a causal agent of rubber tree stem rot (Li et al. 2014) and stem dry rot in <i>Astrophytum ornatum</i> (Quezada-Salinas et al. 2017). The present findings are useful for tropical ornamental plant producers and both landscape and interiorscape professionals challenged with managing stem rot."

Qsn #	Question	Answer
	The Garden Geeks. (2018). <i>Medinilla myriantha</i> . http://thegardengeeks.net/plant-guide/4085-medinilla-myriantha . [Accessed 12 Dec 2018]	"Pests and Diseases: Scale insects when indoors"
	Sunshine Seeds. (2018). <i>Medinilla myriantha</i> . http://www.sunshine-seeds.de . [Accessed 12 Dec 2018]	"Pests: Scale insects, Mealy bugs, Spider mites > especially under glass"

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Botanic Gardens Department. (1898). Poisonous Plants of the Malay Peninsula. Agricultural Bulletin of the Malay Peninsula 8: 199-218	"Some of the <i>Medinillas</i> are acid, and allied plants often astringent, but I know of none with poisonous qualities."
	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. Some species with medicinal uses

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high." ... "Habitat - On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude." [No evidence and unlikely due to habit and wet habitat]

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Jarrett, A. 2003. Ornamental Tropical Shrubs. Pineapple Press Inc., Sarasota, FL	"Exposure: filtered light to shade" ... "Habitat - On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude."
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Habitat - On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude." [Habitat likely shady at least part of the day]
	Sunshine Seeds. (2018). <i>Medinilla myriantha</i> . http://www.sunshine-seeds.de . [Accessed 12 Dec 2018]	"Locations: sun to semi-shade"
	Neal, N. (2012). Gardener's Guide to Tropical Plants: Cool Ways to Add Hot Colors, Bold Foliage, and Striking Textures. Cool Springs Press. Minneapolis, MN	"Malaysian orchid is not actually an orchid at all, and it is said to be native to the Philippine Islands and perhaps Malaysia. Its enigmatic beauty belongs in the bright shade of a tropical garden that enjoys warm days and nights, as well as ample humidity."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high." [As an epiphyte, soil type may be irrelevant to establishment]
	Jarrett, A. 2003. Ornamental Tropical Shrubs. Pineapple Press Inc., Sarasota, FL	"Needs moist soil and shade in the afternoon to perform well."

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high. Branches terete to quadrangular, 10 mm in diameter, bark yellowish; branchlets terete to subquadrangular, not winged, 5 mm in diameter; nodes setose, tufted with coarse bristles 10 mm long, soon deciduous with age." [Epiphytic, but not climbing or smothering]

412	Forms dense thickets	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high." ... "On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude." [No evidence. Primarily epiphytic, small shrub]

501	Aquatic	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high."

502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 11 Dec 2018]	Melastomataceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 11 Dec 2018]	Melastomataceae

Qsn #	Question	Answer
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high. Branches terete to quadrangular, 10 mm in diameter, bark yellowish; branchlets terete to subquadrangular, not winged, 5 mm in diameter; nodes setose, tufted with coarse bristles 10 mm long, soon deciduous with age. Leaves opposite, sessile; blades coriaceous, elliptic-oblong to oblong-ovate, 11-14 cm long, 7-8 cm wide; apices abruptly acuminate to cuspidate; bases attenuate, 5 -plinerved, occasionally 7-plinerved and if so the marginal pair of nerves evanescent; nerves flattened on both surfaces; transverse veins distinct adaxially, absent abaxially."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Quakenbush, P. J. (2018). Pollination, mating system, phenology and characterisation of <i>Medinilla multiflora</i> Merr (Melastomataceae) on Mt. Makiling, Philippines. <i>Sibbaldia: the Journal of Botanic Garden Horticulture</i> , 16: 121-139	"Generalist pollinators and self-compatibility are advantageous traits for establishment and persistence in isolated mountain habitats; however, losses of this habitat due to climate change could have profound consequences for the future success of <i>Medinilla multiflora</i> ." [No evidence, but limited distribution in native range could contribute to future rarity of this species in the wild]
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Habitat - On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude."

602	Produces viable seed	y
	Source(s)	Notes
	Quakenbush, P. J. (2018). Pollination, mating system, phenology and characterisation of <i>Medinilla multiflora</i> Merr (Melastomataceae) on Mt. Makiling, Philippines. <i>Sibbaldia: the Journal of Botanic Garden Horticulture</i> , 16: 121-139	"Seeds numerous (hundreds per fruit), minute, placentation axile." ... "Seed set was very comparable for both the control and self-pollinated fruit" ... " <i>Medinilla multiflora</i> was common in the area and individuals appeared robust. Seed set was good and pollen was highly viable in the Mt Makiling population. These are all indicators of health."

603	Hybridizes naturally	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. Artificial hybrids produced in cultivation from other <i>Medinilla</i> species

Qsn #	Question	Answer
604	Self-compatible or apomictic	y
	Source(s)	Notes
	Quakenbush, P. J. (2018). Pollination, mating system, phenology and characterisation of <i>Medinilla multiflora</i> Merr (Melastomataceae) on Mt. Makiling, Philippines. <i>Sibbaldia: the Journal of Botanic Garden Horticulture</i> , 16: 121-139	"results showed a mixed mating system in <i>Medinilla multiflora</i> where it both out-crossed and was self-compatible."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Quakenbush, P. J. (2018). Pollination, mating system, phenology and characterisation of <i>Medinilla multiflora</i> Merr (Melastomataceae) on Mt. Makiling, Philippines. <i>Sibbaldia: the Journal of Botanic Garden Horticulture</i> , 16: 121-139	" <i>Medinilla multiflora</i> was found to require pollination but not cross-pollination. Two major peaks in stigmatic receptivity occurred throughout the day and the majority of pollen was found to be viable. Generalist bees proved to be the primary pollinators of the study population and were most active in the morning depending on weather conditions. Generalist pollinators and self compatibility are advantageous traits for establishment and persistence in isolated mountain habitats" ... " <i>Medinilla multiflora</i> was found to require pollination but not cross-pollination. Two major peaks in stigmatic receptivity occurred throughout the day and the majority of pollen was found to be viable. Generalist bees proved to be the primary pollinators of the study population and were most active in the morning depending on weather conditions. Generalist pollinators and self-compatibility are advantageous traits for establishment and persistence in isolated mountain habitats"

606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	Nayar, M. (1966). Contributions to the Knowledge of Indo-Malaysian and Other Asiatic Melastomataceae. <i>Kew Bulletin</i> , 20(2), 235-244	" <i>Hederella multiflora</i> " ... " <i>Medinilla multijlora</i> " ... "climber with sucker roots"
	Fransham, R. (2017). How to grow Malaysian tropical May-flowering medinilla in New Zealand. <i>Stuff</i> : May 25 2017. https://www.stuff.co.nz . [Accessed 12 Dec 2018]	"The propagation of medinillas by tip cuttings is easy. Do it in the height of summer and roots will appear in a fringe from the leaf joints after a week or so in damp sand." [Propagated from cuttings. Stem fragments could probably root if dispersed to an appropriate site]

607	Minimum generative time (years)	
	Source(s)	Notes
	Nurseries Online. (2018). <i>Medinilla myriantha</i> . https://www.nurseriesonline.com.au/plant-index/tropical-plants/medinilla-myriantha/ . [Accessed 12 Dec 2018]	"Growth Rate – Medium" [Time to maturity unknown]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
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Qsn #	Question	Answer
	Source(s)	Notes
	Staake, J. (2016). Malaysian Orchid (<i>Medinilla myriantha</i>). Birds & Blooms. http://www.birdsandblooms.com/blog/malaysian-orchid-medinilla-myriantha/ . [Accessed 13 Dec 2018]	"Malaysian Orchid is not a true orchid at all. However, it is considered a "semi-epiphyte," which gives it some of the same growing tendencies as orchids (which are true epiphytes)." ... "These plants anchor themselves in the crooks of trees or cracks of rocks, living on the moisture and nutrients they take from the air. As you might guess, epiphytes require very humid conditions to thrive. Malaysian Orchids are sometimes found growing in the wild tucked into trees, but you can grow them in pots if you provide the right potting medium."
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"The fruit in <i>Medinilla</i> is a berry which may have a thin or thick pericarp. The seeds are small (less than 1 mm) and numerous (50 to 100 per fruit), embedded in a pulpy mass within locules. The fruits are initially green, then turning red to purplish black when mature. Birds are most likely to eat the fruits and disperse the seeds." ... "Epiphytic glabrous shrub 1-2 m high." [The small seed size may allow for transport into suitable semi-epiphytic sites, as has happened with other small-seeded members of the Melastomataceae]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Jarrett, A. 2003. Ornamental Tropical Shrubs. Pineapple Press Inc., Sarasota, FL	"Uses: container, accent, shrub border. An unusual and attractive plant. Does well in containers. Needs moist soil and shade in the afternoon to perform well. A very tender plant suitable for conservatories."
	WRA Specialist. 2018. Personal Communication	Sold in Hawaii Island box stores.

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. Possibly yes, as the seeds could be deposited on tree fern trunks. Other <i>Medinilla</i> have been spread on tree fern logs which are sold for orchid growers.

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"The fruit in <i>Medinilla</i> is a berry which may have a thin or thick pericarp. The seeds are small (less than 1 mm) and numerous (50 to 100 per fruit), embedded in a pulpy mass within locules. The fruits are initially green, then turning red to purplish black when mature. Birds are most likely to eat the fruits and disperse the seeds."

705	Propagules water dispersed	
	Source(s)	Notes

Qsn #	Question	Answer
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"Epiphytic glabrous shrub 1-2 m high." ... "On damp slopes, in mossy forests, or on summits of volcanic mountains at 800-1000 m altitude." [Bird-dispersed epiphyte, but water could secondarily disperse seeds onto moss cover logs, rocks, or other quasi-epiphytic sites]

706	Propagules bird dispersed	Y
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"The fruit in <i>Medinilla</i> is a berry which may have a thin or thick pericarp. The seeds are small (less than 1 mm) and numerous (50 to 100 per fruit), embedded in a pulpy mass within locules. The fruits are initially green, then turning red to purplish black when mature. Birds are most likely to eat the fruits and disperse the seeds. No field observations on seed dispersal and germination are known. The fact that many species are locally endemic indicates that seed dispersal is limited to short distances." ... "Fruits globose, 5-6 mm in diameter; stalks terete, 5-7 mm long."
	Fransham, R. (2017). How to grow Malaysian tropical May-flowering <i>medinilla</i> in New Zealand. Stuff: May 25 2017. https://www.stuff.co.nz . [Accessed 12 Dec 2018]	"Wax-eyes feed on the berries of my plants during the colder months." [Wax-eye (<i>Zosterops lateralis</i>)]

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"The fruit in <i>Medinilla</i> is a berry which may have a thin or thick pericarp. The seeds are small (less than 1 mm) and numerous (50 to 100 per fruit), embedded in a pulpy mass within locules. The fruits are initially green, then turning red to purplish black when mature. Birds are most likely to eat the fruits and disperse the seeds." ... "Epiphytic glabrous shrub 1-2 m high." [As a bird-dispersed epiphyte, seeds are primarily deposited on trees, but small seed size may facilitate dispersal into "semi-epiphytic" sites such as mossy rocks, logs etc. on the feet or fur of animals. Such dispersal has occurred with other small-seeded Melastomataceae in the Hawaiian Islands]

Qsn #	Question	Answer
708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"The fruit in <i>Medinilla</i> is a berry which may have a thin or thick pericarp. The seeds are small (less than 1 mm) and numerous (50 to 100 per fruit), embedded in a pulpy mass within locules. The fruits are initially green, then turning red to purplish black when mature. Birds are most likely to eat the fruits and disperse the seeds. No field observations on seed dispersal and germination are known. The fact that many species are locally endemic indicates that seed dispersal is limited to short distances." ... "Fruits globose, 5-6 mm in diameter; stalks terete, 5-7 mm long."
	Fransham, R. (2017). How to grow Malaysian tropical May-flowering <i>medinilla</i> in New Zealand. Stuff: May 25 2017. https://www.stuff.co.nz . [Accessed 12 Dec 2018]	"Wax-eyes feed on the berries of my plants during the colder months."
801	Prolific seed production (>1000/m ²)	
	Source(s)	Notes
	Regalado Jr., J. C. (1995). Revision of Philippine <i>Medinilla</i> (Melastomataceae). <i>Blumea</i> , 40(1), 113-193	"The fruit in <i>Medinilla</i> is a berry which may have a thin or thick pericarp. The seeds are small (less than 1 mm) and numerous (50 to 100 per fruit), embedded in a pulpy mass within locules." [Densities unknown]
802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2018) Seed Information Database (SID). Version 7.1. Available from: http://data.kew.org/sid/ . [Accessed 13 Dec 2018]	Unknown. Other <i>Medinilla</i> species have orthodox seeds
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species. Epiphytic habit may make herbicide application difficult, and result in non-target effects
804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Nurseries Online. (2018). <i>Medinilla myriantha</i> . https://www.nurseriesonline.com.au/plant-index/tropical-plants/medinilla-myriantha/ . [Accessed 13 Dec 2018]	"Pruning - Light tip pruning after flowering will give the plant a more bushy habit as well as promote more flowers."
	Logee's Greenhouses. (2018). Malaysian Orchid (<i>Medinilla myriantha</i>). https://www.logees.com/malaysian-orchid-medinilla-myriantha.html . [Accessed 13 Dec 2018]	"They take well to pruning, which does help maintain size and fullness. The best time to prune is right after flowering is complete."

Qsn #	Question	Answer
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. Four other <i>Medinilla</i> species are currently documented as naturalized in the Hawaiian Islands, and natural enemies have not been documented to limit their spread

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives in tropical climates
- Other *Medinilla* species have become invasive
- Shade-tolerant
- Reproduces by seeds
- Self-compatible
- Pollinated by generalist insects
- Seeds dispersed by birds and intentionally by people
- Small seed size may facilitate accidental dispersal

Low Risk Traits

- No reports of invasiveness or naturalization, but limited evidence of cultivation outside native range (other than as an indoor house plant)
- Unarmed (no spines, thorns, or burrs)
- Ornamental value
- Grows predominantly as an epiphyte, and any potential impacts may be limited to competition with the native epiphytic biota of a region (i.e. unlikely to transform the fundamental structure of an ecosystem)