

Taxon: Molineria latifolia	Family: Hypoxidaceae
Common Name(s): curculigo lemboh lumbah palm grass weevil lily	Synonym(s): Aurota latifolia (Dryand. ex W.T.Aiton Curculigo latifolia W. T. Aiton

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 14 Jan 2016
WRA Score: 1.0	Designation: L	Rating: Low Risk

Keywords: Palm-like Herb, Edible Fruit, Ornamental, Spreads Vegetatively, Fleshy-fruited

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	y
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)	y
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic	y=1, n=0	n
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		
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)	y=1, n=0	n
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	y
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	n
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
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	n
705	Propagules water dispersed		
706	Propagules bird dispersed		
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)		
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
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	No evidence of domestication
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
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"Origin/Distribution The species is found from China (Guangdong) to Malesia – Malaysia (Perak, Pahang, Sarawak, Sabah), Indonesia (Sumatra, Bangka, Lingga, Java, Kalimantan) and the Philippines (Palawan, Balabac, Samar)."
202	Quality of climate match data	High
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"In its native range, the plant is found in wet areas near streams in primary and secondary forests, from near sea level to 1,100 m altitude." [Elevation range exceeds 1000 m, demonstrating environmental versatility]

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"The species is found from China (Guangdong) to Malesia – Malaysia (Perak, Pahang, Sarawak, Sabah), Indonesia (Sumatra, Bangka, Lingga, Java, Kalimantan) and the Philippines (Palawan, Balabac, Samar)."

Qsn #	Question	Answer
205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Useful Tropical Plants Database. 2016. <i>Molineria latifolia</i> . http://tropical.theferns.info/viewtropical.php?id=Molineria+latifolia . [Accessed 14 Jan 2016]	"It is sometimes cultivated as a fibre plant and is also widely grown as an ornamental in warm temperate to tropical areas"
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"The plant is also grown as an ornamental in southeast Asia, India, Africa, Europe and the United States."

Qsn #	Question	Answer
301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence to date
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. 2016. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm . [Accessed 14 Jan 2016]	No evidence to date

Qsn #	Question	Answer
302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence to date

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

Qsn #	Question	Answer
304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence to date

305	Congeneric weed	y
	Source(s)	Notes
	Useful Tropical Plants Database. 2015. <i>Molineria capitulata</i> . http://tropical.theferns.info/viewtropical.php?id=Molineria+capitulata . [Accessed 14 Jan 2016]	"The plant is often grown as an ornamental and has the potential to become a weed. It has a tendency to spread and establish itself, and is rather well naturalized in the cemetery at Retalhuleu and in the Jardin Botanico in Guatemala[331]."
	Zenni, R. D., & Ziller, S. R. (2011). An overview of invasive plants in Brazil. <i>Revista Brasileira de Botânica</i> , 34(3): 431-446	[<i>Curculigo capitulata</i> included in this list of invasive plants. Impacts unspecified] "Table 1. Invasive alien plants records for the physiognomic-ecological classes (UNESCO 1973) and ecoregion (Olson et al. 2001) in Brazil. Data is from the I3N Brazil database at www.institutohorus.org.br . We gathered location references in the database from field observations, interviews and literature reviews from 2003 until 2008. Locations are mostly related to municipalities or geographical reference points. Phytophysiognomies with no correspondence in the physiognomic ecological classes are marked with *."
	Foxcroft, L. 2002. Kruger National Park Invasive Alien Species Section. Policy Document. South African National Parks, Pretoria, SA. http://www.parks-sa.co.za/ . [Accessed]	[<i>Molineria capitulata</i> included in list of priority alien plants. Impacts unspecified] "Table 2: Second category alien plants. Species which are regarded as priority species in the KNP"

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Lim, T.K. (2012). <i>Edible Medicinal and Non-Medicinal Plants</i> . Volume 4, Fruits. Springer, New York	"A tufted, stemless, andromonoecious herb with erect rhizome and creeping stolons and thick, fibrous roots. Leaf long-petioled (10–100 cm), lanceolate to oblong-lanceolate, 18–40 × 3–8 cm, usually glabrous, both ends tapering, lateral nerves parallel to mid-rib, penni-nerved"

402	Allelopathic	n
	Source(s)	Notes
	Fujii, Y., Parvez, S. S., Parvez, M., Ohmae, Y., & Iida, O. 2003. Screening of 239 medicinal plant species for allelopathic activity using the sandwich method. <i>Weed Biology and Management</i> , 3(4): 233-241	"Table 1. Screening of leaf litter of 239 medicinal plant species under different families using the sandwich method" [Leachates of <i>Curculigo latifolia</i> have no significant effect on lettuce germination and growth]
	Fujii, Y., Shibuya, T., Nakatani, K., Itani, T., Hiradate, S., & Parvez, M. M. (2004). Assessment method for allelopathic effect from leaf litter leachates. <i>Weed Biology and Management</i> , 4(1), 19-23	"Table 2. Evaluation of allelopathic activity of leaf materials of 20 different tree and herbal species of Asia by the sandwich method" [<i>Molineria latifolia</i> has no significant effect on lettuce seedling growth]

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"A tufted, stemless, andromonoeciou herb with erect rhizome and creeping stolons and thick, fibrous roots." [No evidence of parasitism]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Williams, K. D., & Petrides, G. A. (1980). Browse use, feeding behavior, and management of the Malayan tapir. The Journal of Wildlife Management, 44(2): 489-494	"In addition to woody forage, some herbaceous plants (<i>Curculigo latifolia</i> , <i>Homalomena</i> spp., and <i>Phyllagathis rotundifolia</i>) were eaten. Of these, only young leaves were eaten from <i>C. latifolia</i> , and <i>P. rotundifolia</i> was consumed minimally, even where plentiful."

405	Toxic to animals	n
	Source(s)	Notes
	Useful Tropical Plants Database. 2016. <i>Molineria latifolia</i> . http://tropical.theferns.info/viewtropical.php?id=Molineria+latifolia . [Accessed 14 Jan 2016]	"Known Hazards: None known"
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence
	Williams, K. D., & Petrides, G. A. (1980). Browse use, feeding behavior, and management of the Malayan tapir. The Journal of Wildlife Management, 44(2): 489-494	No evidence. Browsed by tapirs

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Useful Tropical Plants Database. 2016. <i>Molineria latifolia</i> . http://tropical.theferns.info/viewtropical.php?id=Molineria+latifolia . [Accessed 14 Jan 2016]	"Known Hazards: None known"
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[No evidence] "The fruit is edible and taste like sweetened cucumber and is believed to increase appetite. The fruit also has taste modifying properties due to the presence of the protein neoculin (previously called curculin)." ... "In Peninsular Malaysia and Borneo, the tough, light-weight leaf fibres are made into fishing nets. In Borneo, they are also used to make ropes, twines, sarongs, rice bags, garments and fabrics. The cloth made from the fibres is known as 'lemba cloth'. The leaves are also used for wrapping fruits, vegetables and food in Indonesia and Malaysia. The leaves are also rolled into strings for tying."

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	[Used medicinally] "(Diuretic, stimulant, stomachic, fever. For sore eyes, boil the leaves with the root of <i>Hibiscus rosa-sinensis</i> and drop the decoction into the eye. Eat the root with betel for too frequent menses.)"
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[No evidence. Unlikely, given wet habitat] "In its native range, the plant is found in wet areas near streams in primary and secondary forests, from near sea level to 1,100 m altitude. It is a shade-loving plant, thriving under partly shaded or sunless conditions, with abundant water supply."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"It is a shade-loving plant, thriving under partly shaded or sunless conditions, with abundant water supply."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"It prefers fertile, well-drained soils, rich in organic matter."
	Useful Tropical Plants Database. 2016. <i>Molineria latifolia</i> . http://tropical.theferns.info/viewtropical.php?id=Molineria+latifolia . [Accessed 14 Jan 2016]	"Requires a fertile, humus-rich, moisture-retentive but well-drained soil[200]."
	Dave's Garden. 2016. Lumbah - <i>Curculigo latifolia</i> . http://davesgarden.com/guides/pf/go/189768/ . [Accessed 14 Jan 2016]	"Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"A tufted, stemless, andromonoecious herb with erect rhizome and creeping stolons and thick, fibrous roots."

Qsn #	Question	Answer
412	Forms dense thickets	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[Unknown] "In its native range, the plant is found in wet areas near streams in primary and secondary forests, from near sea level to 1,100 m altitude. It is a shade-loving plant, thriving under partly shaded or sunless conditions, with abundant water supply."

501	Aquatic	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[Terrestrial] "In its native range, the plant is found in wet areas near streams in primary and secondary forests, from near sea level to 1,100 m altitude. It is a shade-loving plant, thriving under partly shaded or sunless conditions, with abundant water supply. It prefers fertile, well-drained soils, rich in organic matter."

502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 14 Jan 2016]	"Family: Hypoxidaceae. Altfamily: Liliaceae"

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 14 Jan 2016]	"Family: Hypoxidaceae. Altfamily: Liliaceae" [No evidence]

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"A tufted, stemless, andromonoecious herb with erect rhizome and creeping stolons and thick, fibrous roots."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[No evidence. Widely distributed] "The species is found from China (Guangdong) to Malesia – Malaysia (Perak, Pahang, Sarawak, Sabah), Indonesia (Sumatra, Bangka, Lingga, Java, Kalimantan) and the Philippines (Palawan, Balabac, Samar)."

602	Produces viable seed	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"Berry is ovoid to oblong-ovoid, 2.5 cm, white, slightly hairy; beak 6–7 mm, pulp is sweet and edible. Seeds small, ribbed and verruculose." ... "C. latifolia is best propagated using rhizomes and corms as the seeds have a low and slow germination rate (Abdullah et al. 2010) ."
	Useful Tropical Plants Database. 2016. <i>Molineria latifolia</i> . http://tropical.theferns.info/viewtropical.php?id=Molineria+latifolia . [Accessed 14 Jan 2016]	"Propagation Seed - best sown as soon as it is ripe[200]. Division of the rootstock[200]. Offsets[200]."

603	Hybridizes naturally	
	Source(s)	Notes
	Kubitzki, K. (ed.). 1998. The Families and genera of vascular plants. Volume III. Flowering plants, Monocotyledons: Liliales (except Orchidaceae). Springer-Verlag, Berlin, Heidelberg, New York	[No reports of hybridization] "Five to seven spp., Asiatic monsoon area, best known <i>M. recurvate</i> (Dryand.) Nel, largely cultivated in Africa, Asia to Australia."
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	No evidence

Qsn #	Question	Answer
604	Self-compatible or apomictic	n
	Source(s)	Notes
	Afroz, S., & Hassan, M. A. (2008). Systematic studies in the family Liliaceae from Bangladesh. Bangladesh Journal of Plant Taxonomy, 15(2), 115-128	"A large, stout herb. Flowers on scape projecting beyond the leaf-sheaths, unisexual (male) and bisexual, yellow. Fl"
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"Flowers yellow, inconspicuous, in axils of a large lanceolate, hairy bract, in densely several flowered 1.5–3 cm racemes. Lower flowers hermaphrodite, sessile to subsessile with long styles, upper flowers staminate with shorter styles and long-pedicelled. Flower perianth yellow; segments suboblong, 8–12 mm with involute margin (Plates 3 , 4 and 5); stamens slightly shorter than perianth segments; ovary cylindrical, 1.5 cm long; style slender, subequaling stamens with subcapitate stigma."
	Okubo S, Yamada M, Yamaura T, & Akita T. (2010). Effects of the pistil size and self-incompatibility on fruit production in <i>Curculigo latifolia</i> (Liliaceae). Journal of the Japanese Society for Horticultural Science, 79(4), 354-359.	"The shapes of flowers and the cross-compatibility of <i>Curculigo latifolia</i> , which produces a taste modifying protein, neoculin, were investigated for the purpose of setting fruits in Japan as a resource of neoculin. <i>C. latifolia</i> is an andromonoecious plant, that is, flowers in a lower position in an inflorescence are hermaphrodite with long styles, although flowers in higher positions are staminate with short styles. This shows that 22% of all flowers were hermaphroditic in an inflorescence. By the hand-pollination study, the largest rate of setting <i>C. latifolia</i> fruits was shown by the 5th day from the first flowering. The rates of fruit set were gradually reduced after that day. The number of fruits peaked by the 13th day from first flowering. On the other hand, the rate of fruit setting was shown to be 45% by cross-pollination and 4% by self-pollination. These results indicate that <i>C. latifolia</i> has self-incompatibility. To improve the rate of fruit setting of <i>C. latifolia</i> , it is necessary to pollinate compatible pollen by around the 15th day after the first flowering."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Okubo S, Yamada M, Yamaura T, & Akita T. (2010). Effects of the pistil size and self-incompatibility on fruit production in <i>Curculigo latifolia</i> (Liliaceae). Journal of the Japanese Society for Horticultural Science, 79(4), 354-359.	"Since it is presumed that <i>C. latifolia</i> is pollinated by insects such as bees in its original habitat (Kocyan and Endress, 2001), hand pollination is required in greenhouse cultivation."
	Ismail, M. F., Abdullah, N. A. P., Saleh, G. B., & Ismail, M. (2010). Anthesis and flower visitors in <i>Curculigo latifolia</i> Dryand. Journal of Biology and Life Sciences, 1(1), 13-15	"The chronology of flower anthesis in <i>Curculigo latifolia</i> Dryand was studied. This was to described the flowering timeline and to observed flower visitors. Observation on adult plants were carried out from 0500 until 2000 hours and repeated twice. The most common visitors were black ants found nesting between the leaf and bees. Visitation by bees mainly occurred in the morning between 0930 and 1000 hours. Anthesis begun at 0630 and flowers were fully expanded at 0930 exposing dehisced anthers and glistening stigma. Flowers lasted for a day and completely withered by 2000 hours."

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes

Qsn #	Question	Answer
	Mazza, G. 2016. <i>Molineria latifolia</i> . http://www.photomazza.com/?Molineria-latifolia . [Accessed 14 Jan 2016]	"It reproduces by seed, that, if fresh, germinates easily in organic draining loam maintained constantly humid at the temperature of 24 -26 °C, by division and through root suckers."

607	Minimum generative time (years)	>3
	Source(s)	Notes
	Northern Land Manager. 2004. Fire responses of <i>Molineria capitulata</i> . http://www.landmanager.org.au/fire-responses-molineria-capitulata . [Accessed 14 Jan 2016]	"Life Span: 6-20 years Growth Form: Herb First seeds: 4-10 years" [Related taxon reaches maturity in 4+ years. <i>M. latifolia</i> would presumably have a similar time to maturity]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Lim, T.K. (2012). <i>Edible Medicinal and Non-Medicinal Plants</i> . Volume 4, Fruits. Springer, New York	"Berry is ovoid to oblong-ovoid, 2.5 cm, white, slightly hairy; beak 6–7 mm, pulp is sweet and edible. Seeds small, ribbed and verruculose." [Unlikely. Fruit lack means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Lim, T.K. (2012). <i>Edible Medicinal and Non-Medicinal Plants</i> . Volume 4, Fruits. Springer, New York	"The plant is also grown as an ornamental in southeast Asia, India, Africa, Europe and the United States."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Lim, T.K. (2012). <i>Edible Medicinal and Non-Medicinal Plants</i> . Volume 4, Fruits. Springer, New York	"The plant is also grown as an ornamental in southeast Asia, India, Africa, Europe and the United States." [Possible that seeds of plants cultivated with other ornamentals could become soil contaminants, although this seems unlikely]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Lim, T.K. (2012). <i>Edible Medicinal and Non-Medicinal Plants</i> . Volume 4, Fruits. Springer, New York	"Berry is ovoid to oblong-ovoid, 2.5 cm, white, slightly hairy; beak 6–7 mm, pulp is sweet and edible. Seeds small, ribbed and verruculose." [Fleshy-fruited. No adaptations for wind dispersal]

Qsn #	Question	Answer
705	Propagules water dispersed	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[Distribution along streams suggests possible movement by water] "In its native range, the plant is found in wet areas near streams in primary and secondary forests, from near sea level to 1,100 m altitude. It is a shade-loving plant, thriving under partly shaded or sunless conditions, with abundant water supply."

706	Propagules bird dispersed	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[Fleshy-fruited. Seeds, if produced, may be adapted to bird dispersal, although dispersal mechanisms are unknown] "Berry is ovoid to oblong-ovoid, 2.5 cm, white, slightly hairy; beak 6–7 mm, pulp is sweet and edible. Seeds small, ribbed and verruculose."

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Kubitzki, K. (ed.). 1998. The Families and genera of vascular plants. Volume III. Flowering plants, Monocotyledons: Liliaceae (except Orchidaceae). Springer-Verlag, Berlin, Heidelberg, New York	[Unknown. Ants may possibly play a role in dispersal] "Particularly intriguing is seed dispersal of underground seeds in the more or less baccate fruits of Curcuiigo, Empodium, Rhodohypoxis and Saniellia. Some of them produce seeds with a distinct strophiole, probably acting as an elaiosome. Ants or related insects might thus be involved."

708	Propagules survive passage through the gut	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[Fleshy-fruited. Unknown if fruit are consumed or if seeds survive gut passage] "Berry is ovoid to oblong-ovoid, 2.5 cm, white, slightly hairy; beak 6–7 mm, pulp is sweet and edible. Seeds small, ribbed and verruculose."

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	[Unknown] "Berry is ovoid to oblong-ovoid, 2.5 cm, white, slightly hairy; beak 6–7 mm, pulp is sweet and edible. Seeds small, ribbed and verruculose."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2016) Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 14 Jan 2016]	[Unknown] "Storage Behaviour: No data available for species or genus. Of 2 known taxa of family HYPOXIDACEAE, 100.00% Orthodox (p/?)"

Qsn #	Question	Answer
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 4, Fruits. Springer, New York	"A tufted, stemless, andromonoecious herb with erect rhizome and creeping stolons and thick, fibrous roots." [Unknown. May be able to resprout from rhizomes or stolons if damaged]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Thrives in tropical climates
- Shade-tolerant
- A geophyte, able to resprout from tuberous, underground stems
- Able to reproduce by seeds
- Spreads vegetatively
- Planted intentionally by people
- Limited ecological information reduces accuracy of risk prediction

Low Risk Traits

- Unarmed (no spines, thorns or burrs)
- Palatable to browsing animals in native range
- Not reported to be toxic
- Ornamental
- Edible fruits
- Self-incompatible
- Reaches maturity in 4-10 years

Second Screening Results for Herbs

(A) Reported as a weed of cultivated lands?> No
Outcome = Accept