

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

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

<i>Meehanian montis-koyae</i>			
Question number	Question	Answer	Score
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to U.S. climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	n	0
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	n	-2
3.02	Garden/amenity/disturbance weed	n	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	n	0
3.05	Congeneric weed	n	0
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic		
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals		
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens		
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	?	
4.1	Grows on one or more of the following soil types: alfisols, entisols, or mollisols	y	1
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	n	0

5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	?	
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed		
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators		
6.06	Reproduction by vegetative fragmentation	?	
6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed		
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)		
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
Total Score			-2

Outcome	Accept
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section	# questions answered	satisfy minimum?
A	11	Yes
B	7	Yes
C	8	Yes
total	26	yes

Data collected 2008

Question number	Reference	Source data
1.01		used horticulturally, but no evidence of significant modification
1.02		
1.03		
2.01	<p>1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2. Ohwi, J (1933) <i>Symbolae ad Floram Asiae Orientalis</i>, 8. <i>Acta Phytotaxonomica et Geobotanica</i> 2(2): 102-108. 3. Funamoto, T, Tanabe, T, and Nakamura, T (2000) A karyomorphological comparison of two species of Japanese <i>Meehania</i>, <i>Lamiaceae</i> (<i>Labiatae</i>). <i>Chromosome Science</i> 4: 107-109. 4. Ohwi, J (1965) <i>Flora of Japan</i>. Smithsonian Institution, Washington, D.C.</p>	<p>1. Global hardiness zones 6-7. 2. Hondo: Mt. Koyasan in Kii [Japan] 3. Japan (endemic to Kinki District). 4. Honshu (Kii Province and Chugoku District); rare.</p>
2.02		
2.03	<p>1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Ohwi, J (1933) <i>Symbolae ad Floram Asiae Orientalis</i>, 8. <i>Acta Phytotaxonomica et Geobotanica</i> 2(2): 102-108. 3. Funamoto, T, Tanabe, T, and Nakamura, T (2000) A karyomorphological comparison of two species of Japanese <i>Meehania</i>, <i>Lamiaceae</i> (<i>Labiatae</i>). <i>Chromosome Science</i> 4: 107-109. 4. Ohwi, J (1965) <i>Flora of Japan</i>. Smithsonian Institution, Washington, D.C.</p>	<p>1. One to two climatic regions. 2. Hondo: Mt. Koyasan in Kii [Japan] 3. Japan (endemic to Kinki District). 4. Honshu (Kii Province and Chugoku District); rare.</p>
2.04	<p>MSN Encarta (http://encarta.msn.com/encyclopedia_761566679_4/Japan.html).</p>	<p>Average annual precipitation in Sapporo [north] is 1,130 mm (45 in), while in Tokyo [central] it is 1,410 mm (55 in) and in Kagoshima [south] it is 2,240 mm (88 in). [Honshu is the central Japanese island]</p>
2.05	<p>Junker, K (2007) <i>Gardening with woodland plants</i>. Timber Press, Portland, Oregon (found online at http://books.google.com/books?id=dk28nOOY2IAC&dq=Meehania+montis-koyae+++).</p>	<p>Cultivated in the United Kingdom.</p>

3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	1. Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C. 2. Wu, ZY and Raven, PH (editors), Flora of China, Vol. 17, p. 122. Science Press, Beijing, & Missouri Botanical Garden Press, St. Louis.	1, 2. no description of these traits
4.02		
4.03	1. Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C. 2. Wu, ZY and Raven, PH (editors), Flora of China, Vol. 17, p. 122. Science Press, Beijing, & Missouri Botanical Garden Press, St. Louis.	1, 2. no description of parasitism
4.04		
4.05	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	no evidence
4.06		
4.07	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	no evidence
4.08		
4.09	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	"Woods in mountains".
4.1	USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html).	Entisols are present in this region.
4.11	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	"Perennial herb without stolons"; "stems 20-25 cm. long, slender".
4.12	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	"Perennial herb without stolons"; "stems 20-25 cm. long, slender".
5.01		terrestrial
5.02		Lamiaceae

5.03		Lamiaceae
5.04	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	"Perennial herb without stolons".
6.01		no evidence
6.02		
6.03		
6.04		
6.05		
6.06	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	"Perennial herb without stolons".
6.07		
7.01		
7.02	Junker, K (2007) Gardening with woodland plants. Timber Press, Portland, Oregon (found online at http://books.google.com/books?id=dk28nOOY2IAC&dq=Meehania+montis-koyae+++).	Cultivated in the United Kingdom.
7.03		
7.04	Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C.	Nutlets ovate, smooth. [no evidence of adaptations to wind dispersal]
7.05		
7.06		
7.07	1. Ohwi, J (1965) Flora of Japan. Smithsonian Institution, Washington, D.C. 2. Wu, ZY and Raven, PH (editors), Flora of China, Vol. 17, p. 122. Science Press, Beijing, & Missouri Botanical Garden Press, St. Louis.	1. "Nutlets ovate, smooth". 2. "Nutlets oblong to oblong-ovoid, glabrous" [genus description]. [no evidence of adaptations to wind dispersal]
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		