

<b>Taxon:</b> <i>Plectranthus verticillatus</i> (L.f.) Druce	<b>Family:</b> Lamiaceae
<b>Common Name(s):</b> gossip spurflower money plant Swedish begonia Swedish ivy whorled plectranthus	<b>Synonym(s):</b> <i>Ocimum racemosum</i> Thunb. <i>Ocimum verticillatum</i> L.f. <i>Plectranthus nummularius</i> Briq. <i>Plectranthus thunbergii</i> Benth.

<b>Assessor:</b> No Assessor	<b>Status:</b> Assessor Approved	<b>End Date:</b> 11 Jul 2018
<b>WRA Score:</b> 11.0	<b>Designation:</b> H(HPWRA)	<b>Rating:</b> High Risk

**Keywords:** Succulent Herb, Weedy, Ground Cover, Shade Tolerant, Spreads Vegetatively

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	y
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	y
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed		
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

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	y
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		
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	1
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	y
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	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
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	y=-1, n=1	y
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
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
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	[Not highly domesticated] " <i>Plectranthus verticillatus</i> is a nursery favourite in warmer areas of the world. A number of commercial cultivars, including several variegated forms, have been developed here and overseas: 'Barberton', 'Blyde', 'Eureka', 'Freckles', 'Gossip', 'Malelaan', 'Money Maker', 'Pink Surprise', and 'Ubombo'."

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
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Abundant in its native habitat in frost-free areas along forest margins, in woodland, kloof forest and scrub forest from Knysna through KwaZulu-Natal to Limpopo."

202	Quality of climate match data	High
	Source(s)	Notes
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled <i>Plectranthus</i> - <i>Plectranthus verticillatus</i> . <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"Hardiness: USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes

Qsn #	Question	Answer
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Not threatened in its natural habitat. This easy-growing plant has become naturalised in a number of warmer areas of the world, from the United States and the Caribbean islands to New South Wales in Australia." ... "Abundant in its native habitat in frost-free areas along forest margins, in woodland, kloof forest and scrub forest from Knysna through KwaZulu-Natal to Limpopo."

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	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	"It is widespread in cultivation in the U.S. under the common name "Swedish-ivy," though it is not native to Sweden." ... "An attractive hanging basket specimen, in Hawai'i Swedish-ivy can also be used as a mound-forming ground cover up to 2' tall."
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	" <i>Plectranthus verticillatus</i> is a perennial semi-succulent ground cover native to woodland and forest margins in southeast Africa. It has long been a popular garden subject in many parts of the world, both for its attractive foliage as well as for its delicate white to pale mauve flowers."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Starr, F., Starr, K. & Loope, L.L. 2004. <i>New plant records from the Hawaiian Archipelago</i> . Bishop Museum Occasional Papers 79: 20-30	"Native to South Africa (Northern Transvaal, Eastern Transvaal, Eastern Cape), Swaziland, and Mozambique (Brickell & Zuk, 1997), <i>P. verticillatus</i> is known from BISH specimens to have been first collected in Hawai'i on O'ahu in 1986 and is now naturalized in Pi'iholo and Olinda, Maui where it can be seen growing wild on many stretches of road. <i>Plectranthus verticillatus</i> is also apparently established and spreading on O'ahu. This prostrate herb can be distinguished from other <i>Plectranthus</i> in the state by the following combination of characteristics. "Mat-forming, semi-succulent perennial with creeping stems rooting at the nodes. Ovate to rounded coarsely toothed, soft, fleshy leaves, 1/2–1 1/2 in [1.5–4 cm] long, have purplish green undersides. Terminal spikes, 6 in [15 cm] long, of whorled, tubular, 2-lipped, purple-speckled, white or pale mauve flowers, 1/2–1 in [1.5–2.5 cm] across." (Brickell & Zuk, 1997). These collections represent a new naturalized record for the Hawaiian Islands. Material examined: MAUI: East Maui, Pi'iholo, growing on steep banks, 3100 ft [945 m], 26 Oct 2001, Starr & Martz 011026-2. O'AHU: Honolulu Distr, Wiliwilinui Trail, apparently established from discarded plant material dumped on this slope, now spreading, 26 Aug 2001, Imada, Caraway, & Smith 2001-57."
	Queensland Government. (2018). <i>Weeds of Australia</i> . <i>Plectranthus verticillatus</i> . <a href="http://keyserver.lucidcentral.org">http://keyserver.lucidcentral.org</a> . [Accessed 11 Jul 2018]	"Naturalised in some parts of eastern Australia (i.e. in south-eastern Queensland and the coastal districts of northern and central New South Wales). Naturalised overseas in Puerto Rico and Hawaii."
	PlantNET. 2018. <i>New South Wales Flora Online - Plectranthus verticillatus</i> . National Herbarium of NSW, Royal Botanic Garden, Sydney. <a href="http://plantnet.rbgsyd.nsw.gov.au">http://plantnet.rbgsyd.nsw.gov.au</a> . [Accessed 11 Jul 2018]	"naturalized in the Kariong district. Native of SE Afr. NSW subdivisions: *NC, *CC, *SC"

Qsn #	Question	Answer
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"This easy-growing plant has become naturalised in a number of warmer areas of the world, from the United States and the Caribbean islands to New South Wales in Australia."

302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	iGarden. 2018. <i>Plectranthus verticillatus</i> . <a href="http://www.igarden.com.au/plant-type.jsp?t=plectranthus&amp;id=199">http://www.igarden.com.au/plant-type.jsp?t=plectranthus&amp;id=199</a> . [Accessed 11 Jul 2018]	"In warmer climates than Sydney, it may become a pest, and should not be planted near bushland."
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled <i>Plectranthus</i> - <i>Plectranthus verticillatus</i> . <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"On Jan 10, 2007, MadGecko13 from Corpus Christi, TX (Zone 9a) wrote: I got this as an overgrown pot plant when I bought my house. It escaped its pot, so it can be somewhat of a pest. Easily removed though."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"References: United States of America-N- 101, United States of America-N-839, Australia-W-853, Australia-W-869, Australia-N-354, Australia-N-1049, Galapagos Islands-CN-1157, United States of America-N-1292, Australia-E-1456, Global-CD-1611, El Salvador-N-1796, Ethiopia-N-1796, United States of America-N-2092, Australia-W-1977."
	Queensland Government. (2018). Weeds of Australia. <i>Plectranthus verticillatus</i> . <a href="http://keyserver.lucidcentral.org">http://keyserver.lucidcentral.org</a> . [Accessed 11 Jul 2018]	"Swedish ivy ( <i>Plectranthus verticillatus</i> ) is regarded as a minor environmental weed in south eastern Queensland." [Impacts unspecified. Treated conservatively as a minor weed until more definitive impacts are identified]
	Mt Nebo and Mt Glorious Environment Protection Association. 2008. MEPA Weed Control <i>Plectranthus verticillatus</i> Creeping Charlie. <a href="http://www.gloriousnebo.org.au/MEPA/creepingcharlie.pdf">www.gloriousnebo.org.au/MEPA/creepingcharlie.pdf</a>	"Treatment - Complete removal best as plants regenerate from roots and stems left on the ground. Spraying 2 to 3 times over several months is effective with 1:100 glyphosate." [Controlled as an undesirable weed. Impacts unspecified]
	Save Our Waterways Now. 2018. <i>Plectranthus verticillatus</i> (LAMIACEAE) a <i>Plectranthus</i> . <a href="http://www.saveourwaterwaysnow.com.au">http://www.saveourwaterwaysnow.com.au</a> . [Accessed 11 Jul 2018]	[Emerging weed] "Pleasantly aromatic, soft, Semi-succulent, perennial herb to around 25 cm, native of SE Afr. Weed risk medium, emerging."
	Richardson, F. J., Richardson, R. G., & Shepherd, R. C. H. 2011. Weeds of the South-East: An Identification Guide for Australia. Second Edition. RG and FJ Richardson, Victoria, Australia	Included in the list of weeds. No impacts specified

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

304	Environmental weed	
	Source(s)	Notes
	iGarden. 2018. <i>Plectranthus verticillatus</i> . <a href="http://www.igarden.com.au/plant-type.jsp?t=plectranthus&amp;id=199">http://www.igarden.com.au/plant-type.jsp?t=plectranthus&amp;id=199</a> . [Accessed 11 Jul 2018]	"In warmer climates than Sydney, it may become a pest, and should not be planted near bushland."

Qsn #	Question	Answer
	Queensland Government. (2018). Weeds of Australia. <i>Plectranthus verticillatus</i> . <a href="http://keyserver.lucidcentral.org">http://keyserver.lucidcentral.org</a> . [Accessed 11 Jul 2018]	"Swedish ivy ( <i>Plectranthus verticillatus</i> ) is regarded as a minor environmental weed in south eastern Queensland." [Impacts unspecified. Treated conservatively as a minor weed until more definitive impacts are identified]
<b>305</b>	<b>Congeneric weed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Macdonald, I.A.W., Reaser, J.K., Bright, C., Neville, L.E., Howard, G.W., Murphy, S.J. & Preston, G. (eds.) 2003. Invasive alien species in southern Africa: national reports & directory of resources. Global Invasive Species Programme, Cape Town, South Africa	" <i>Plectranthus comosus</i> : Category 3 (Declared invader): • No further plantings allowed (except with special permission) • No trade of propagative material • Existing plants may remain but must be prevented from spreading • Prohibited within 30 m of the 1:50 year floodline of watercourses or wetlands unless authorization obtained"
<b>401</b>	<b>Produces spines, thorns or burrs</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	[No evidence] "Aromatic soft herbs 100-305 mm tall with a spread of about 600 mm. The often glossy, soft, round to obovate leaves are light to dark green above, sometimes deep purple below, semi-succulent (64-90 mm across) with crenate to broadly-toothed margins borne on rectangular stems. Stems are short, strigose (short rough hairs pointed in the same direction)."
<b>402</b>	<b>Allelopathic</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2018. Personal Communication	Unknown. No evidence found
<b>403</b>	<b>Parasitic</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Aromatic soft herbs 100-305 mm tall with a spread of about 600 mm." [Lamiaceae. No evidence]
<b>404</b>	<b>Unpalatable to grazing animals</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Hicks Nurseries. (2018). Variegated Spurflower - <i>Plectranthus verticillatus</i> 'Variegata'. <a href="http://plants.hicksnurseries.com">http://plants.hicksnurseries.com</a> . [Accessed 11 Jul 2018]	"Deer don't particularly care for this plant and will usually leave it alone in favor of tastier treats."
	Lukhoba, C. W., Simmonds, M. S., & Paton, A. J. 2006. <i>Plectranthus</i> : A review of ethnobotanical uses. Journal of Ethnopharmacology, 103(1): 1-24	" <i>Plectranthus</i> spp. are mostly used as dry season fodder." [Generic description]
<b>405</b>	<b>Toxic to animals</b>	<b>n</b>

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	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

406	Host for recognized pests and pathogens	
	<b>Source(s)</b>	<b>Notes</b>
	The Royal Horticultural Society. 2018. <i>Plectranthus verticillatus</i> - Swedish ivy. <a href="https://www.rhs.org.uk/Plants/13263/Plectranthus-verticillatus/Details">https://www.rhs.org.uk/Plants/13263/Plectranthus-verticillatus/Details</a> . [Accessed 11 Jul 2018]	"Pests - Generally pest free Diseases - Generally disease free "

407	Causes allergies or is otherwise toxic to humans	n
	<b>Source(s)</b>	<b>Notes</b>
	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
	Children's of Alabama. (2018). Non-Toxic Plants. <a href="https://www.childrensal.org/about-the-rpcc">https://www.childrensal.org/about-the-rpcc</a> . [Accessed 11 Jul 2018]	<i>Plectranthus verticillatus</i> listed as non-toxic

408	Creates a fire hazard in natural ecosystems	n
	<b>Source(s)</b>	<b>Notes</b>
	Bell, C. (2000). Firescaping your Garden. <i>Veld &amp; Flora</i> 86 (2): 86	[Fire-resistant groundcover] "The low resistance zone around the house This area must be kept free of large shrubs. It should contain low growing plants and groundcovers, interspersed with gravel or lawn. No climbers or trellises should be attached to the walls of the house in a high-risk fire area as these act as 'ladders' for the fire. Groundcovers for sunny areas include <i>Cliffortia ferruginea</i> , <i>Otholobium decumbens</i> , <i>Dymondia margaretae</i> , <i>gazanias</i> , <i>Helichrysum argyrophyllum</i> , <i>Hermannia saccifera</i> , <i>Cotula lineariloba</i> , <i>Agathosma ovata</i> 'Kluitjies kraal' and <i>vygies</i> . For shady areas, you should grow <i>Plectranthus verticillatus</i> , <i>P neochilus</i> (which can also grow in the sun), and <i>P. ciliatus</i> 'Drege'."
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	[No evidence. Semi-succulent leaves would likely minimize fire risk] "Aromatic soft herbs 100-305 mm tall with a spread of about 600 mm. The often glossy, soft, round to obovate leaves are light to dark green above, sometimes deep purple below, semi-succulent (64-90 mm across)"

409	Is a shade tolerant plant at some stage of its life cycle	y
	<b>Source(s)</b>	<b>Notes</b>

Qsn #	Question	Answer
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"It needs full sun to partial shade with a rich, well-drained soil mix."
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled <i>Plectranthus</i> - <i>Plectranthus verticillatus</i> . <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"Sun Exposure: Sun to Partial Shade" ... "On Aug 8, 2004, onalee from Brooksville, FL (Zone 9a) wrote: Very easy to grow - I have mine in a hanging basket in full shade and it blooms all summer!"
	The National Gardening Association. (2018). Swedish Ivy ( <i>Plectranthus verticillatus</i> ). <a href="https://garden.org/plants/view/87263/Swedish-Ivy-Plectranthus-verticillatus/">https://garden.org/plants/view/87263/Swedish-Ivy-Plectranthus-verticillatus/</a> . [Accessed 11 Jul 2018]	"Sun Requirements: Partial or Dappled Shade Partial Shade to Full Shade"
	Hicks Nurseries. (2018). Variegated Spurflower - <i>Plectranthus verticillatus</i> 'Variegata'. <a href="http://plants.hicksnurseries.com">http://plants.hicksnurseries.com</a> . [Accessed 11 Jul 2018]	"This plant does best in partial shade to shade."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Hicks Nurseries. (2018). Variegated Spurflower - <i>Plectranthus verticillatus</i> 'Variegata'. <a href="http://plants.hicksnurseries.com">http://plants.hicksnurseries.com</a> . [Accessed 11 Jul 2018]	"It is not particular as to soil type or pH. It is highly tolerant of urban pollution and will even thrive in inner city environments."
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled <i>Plectranthus</i> - <i>Plectranthus verticillatus</i> . <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Soil type: Sandy, Clay, Loam" ... "PH: Acid, Alkaline, Neutral"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Aromatic soft herbs 100-305 mm tall with a spread of about 600 mm."

412	Forms dense thickets	n
	Source(s)	Notes
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	" <i>Plectranthus verticillatus</i> is a perennial semi-succulent ground cover native to woodland and forest margins in southeast Africa."



Qsn #	Question	Answer
501	<b>Aquatic</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	[Terrestrial] "Abundant in its native habitat in frost-free areas along forest margins, in woodland, kloof forest and scrub forest from Knysna through KwaZulu-Natal to Limpopo."
502	<b>Grass</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network. 2018. 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 Jul 2018]	Family: Lamiaceae (alt.Labiatae) Subfamily: Nepetoideae Tribe: Ocimeae Subtribe: Plectranthinae
503	<b>Nitrogen fixing woody plant</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network. 2018. 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 Jul 2018]	Family: Lamiaceae (alt.Labiatae) Subfamily: Nepetoideae Tribe: Ocimeae Subtribe: Plectranthinae
504	<b>Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	[No evidence] "Aromatic soft herbs 100-305 mm tall with a spread of about 600 mm. The often glossy, soft, round to obovate leaves are light to dark green above, sometimes deep purple below, semi-succulent (64-90 mm across) with crenate to broadly-toothed margins borne on rectangular stems. Stems are short, strigose (short rough hairs pointed in the same direction)."
601	<b>Evidence of substantial reproductive failure in native habitat</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Not threatened in its natural habitat. This easy-growing plant has become naturalised in a number of warmer areas of the world, from the United States and the Caribbean islands to New South Wales in Australia."
602	<b>Produces viable seed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Benson, D. & McDougall, L. (1997). Ecology of Sydney Plant Species. Part 5. Dicotyledon families Flacourtiaceae to Myrsinaceae. <i>Cunninghamia</i> 5(2): 330-544	"Fruit/seed: Dry fruit enclosed in calyx, 7 mm long at maturity."

Qsn #	Question	Answer
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed ]	"Nutlets 1 mm long, brownish."
	The Royal Horticultural Society. 2018. <i>Plectranthus verticillatus</i> - Swedish ivy. <a href="https://www.rhs.org.uk/Plants/13263/Plectranthus-verticillatus/Details">https://www.rhs.org.uk/Plants/13263/Plectranthus-verticillatus/Details</a> . [Accessed 11 Jul 2018]	"Propagation - Propagate by seed at 19-24°C (19-24°F) when ripe or propagate by stem-tip cuttings at any time of year (see softwood cuttings) "

603	Hybridizes naturally	
	Source(s)	Notes
	Rice, L. J., Brits, G. J., Potgieter, C. J., & Van Staden, J. (2011). <i>Plectranthus</i> : A plant for the future?. South African Journal of Botany, 77(4), 947-959	[Unknown. Possibly] "Hybrids form the basis of artificial breeding and horticultural developments in <i>Plectranthus</i> , but natural hybrids are also widespread. Natural areas where more than one species cooccur and share a pollinator often produce extensive stands of hybrids and hybrid swarms. Such hybrids are seldom fertile and multiply through vegetative means."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	[Unknown] "White, pale mauve, or pale pink flowers appear sporadically throughout the year in gardens but more abundantly in spring and late autumn. Inflorescence terminal, racemose, verticillate (whorled), 50-260 mm long, often with paired side branches (verticillasters) at the base. Calyx 3 mm long enlarging to 5 mm. Corolla 10-25 mm long, white, often speckled; tube 4-16 mm long, straight, laterally compressed, 2-3 mm broad, almost linear; base slightly saccate."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Rice, L. J., Brits, G. J., Potgieter, C. J., & Van Staden, J. (2011). <i>Plectranthus</i> : A plant for the future?. South African Journal of Botany, 77(4), 947-959	"A pollination study of twenty species of South African <i>Plectranthus</i> and relatives showed that bees (Apidae), and various families of flies (Nemestrinidae, Tabanidae and Acroceridae) are important pollinating agents (Potgieter et al., 1999, 2009)..."
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"White, pale mauve, or pale pink flowers appear sporadically throughout the year in gardens but more abundantly in spring and late autumn. Inflorescence terminal, racemose, verticillate (whorled), 50-260 mm long, often with paired side branches (verticillasters) at the base. Calyx 3 mm long enlarging to 5 mm. Corolla 10-25 mm long, white, often speckled; tube 4-16 mm long, straight, laterally compressed, 2-3 mm broad, almost linear; base slightly saccate."

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes

Qsn #	Question	Answer
	Richardson, F. J., Richardson, R. G., & Shepherd, R. C. H. 2011. Weeds of the South-East: An Identification Guide for Australia. Second Edition. RG and FJ Richardson, Victoria, Australia	"often roots at the stem joints (nodes)"
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled Plectranthus - Plectranthus verticillatus. <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"Propagation Methods: By dividing the rootball From herbaceous stem cuttings From seed; direct sow after last frost" ... "On Aug 11, 2017, oldtimer1940 from Houston, TX wrote: This plant grows extremely well where you do not want it.. if a runner breaks off it grows well in flower bed." ... "On Jan 10, 2007, MadGecko13 from Corpus Christi, TX (Zone 9a) wrote: ... I got this as an overgrown pot plant when I bought my house. It escaped its pot, so it can be somewhat of a pest. Easily removed though. ... Grows fast from small pieces just stuck in the dirt." ... "On Jun 4, 2006, Tiki_Garden from Cibolo, TX wrote: ... They make outstanding hanging baskets, and propagation is so easy - just break them off, stick them in the soil, and let them grow!" ... "On May 27, 2006, Blubaby from Mariemont, OH (Zone 6b) wrote: ... They're so robust I have to trim them constantly, and I can't see the pots they hang in anymore! I grew them from one tiny cutting -- they root like crazy in a glass of water. Every branch seems to have an overabundance of root nubs on it."
	Khanyile, S. 2010. Plectranthus verticillatus. PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Propagation: Propagated from stem cuttings and by division of larger plants. When established, plant out in beds with a well-drained mixture of bark (we use pine bark chips), sand and soil rich in humus in lightly shaded to full sunlight situations."

607	Minimum generative time (years)	1
	Source(s)	Notes
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled Plectranthus - Plectranthus verticillatus. <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"It can be an annual outside, but works best in containers inside. Grows quickly and beautifully."
	The National Gardening Association. (2018). Swedish Ivy (Plectranthus verticillatus). <a href="https://garden.org/plants/view/87263/Swedish-Ivy-Plectranthus-verticillatus/">https://garden.org/plants/view/87263/Swedish-Ivy-Plectranthus-verticillatus/</a> . [Accessed 11 Jul 2018]	"Suitable as Annual"

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y
	Source(s)	Notes
	Starr, F., Starr, K. & Loope, L.L. 2004. New plant records from the Hawaiian Archipelago. Bishop Museum Occasional Papers 79: 20-30	[Occurs along roads, & established from dumped plant material] "MAUI: East Maui, Pi'iholo, growing on steep banks, 3100 ft [945 m], 26 Oct 2001, Starr & Martz 011026-2. O'AHU: Honolulu Distr, Wiliwilinui Trail, apparently established from discarded plant material dumped on this slope, now spreading, 26 Aug 2001, Imada, Caraway, & Smith 2001-57."

702	Propagules dispersed intentionally by people	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	"It is widespread in cultivation in the U.S. under the common name "Swedish-ivy," though it is not native to Sweden." ... "An attractive hanging basket specimen, in Hawai'i Swedish-ivy can also be used as a mound-forming ground cover up to 2' tall."
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	" <i>Plectranthus verticillatus</i> is a perennial semi-succulent ground cover native to woodland and forest margins in southeast Africa. It has long been a popular garden subject in many parts of the world, both for its attractive foliage as well as for its delicate white to pale mauve flowers."

703	Propagules likely to disperse as a produce contaminant	
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Propagation: Propagated from stem cuttings and by division of larger plants." [Unlikely. Typically propagated vegetatively]

704	Propagules adapted to wind dispersal	n
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Nutlets 1 mm long, brownish."

705	Propagules water dispersed	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2018. Personal Communication	Unknown. Ability to root at nodes from stem fragments suggests that water could disperse vegetative material

706	Propagules bird dispersed	n
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Nutlets 1 mm long, brownish."

707	Propagules dispersed by other animals (externally)	n
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2018. Personal Communication	No evidence, and unlikely. Vegetative fragments and seeds, when produced, lack means of external attachment.

Qsn #	Question	Answer
708	<b>Propagules survive passage through the gut</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2018. Personal Communication	Unknown if seeds, when produced, would survive passage through the gut
801	<b>Prolific seed production (&gt;1000/m2)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Nutlets 1 mm long, brownish." [Densities unknown]
802	<b>Evidence that a persistent propagule bank is formed (&gt;1 yr)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Royal Botanic Gardens Kew. (2018) Seed Information Database (SID). Version 7.1. Available from: <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a> . [Accessed 11 Jul 2018]	Many <i>Plectranthus</i> species have orthodox seed storage. Persistence in soil seed bank unknown
803	<b>Well controlled by herbicides</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Mt Nebo and Mt Glorious Environment Protection Association. 2008. MEPA Weed Control <i>Plectranthus verticillatus</i> Creeping Charlie. <a href="http://www.gloriousnebo.org.au/MEPA/creepingcharlie.pdf">www.gloriousnebo.org.au/MEPA/creepingcharlie.pdf</a>	"Treatment - Complete removal best as plants regenerate from roots and stems left on the ground. Spraying 2 to 3 times over several months is effective with 1:100 glyphosate."

Qsn #	Question	Answer
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Dave's Garden. 2018. Swedish Ivy, Swedish Begonia, Whorled Plectranthus - <i>Plectranthus verticillatus</i> . <a href="https://davesgarden.com/guides/pf/go/1354/">https://davesgarden.com/guides/pf/go/1354/</a> . [Accessed 11 Jul 2018]	"On May 27, 2006, Blubaby from Mariemont, OH (Zone 6b) wrote: ... 've had two monstrous Swedish Ivy plants growing for 2½ years in southeast-facing windows, so they get direct morning light year 'round. They're so robust I have to trim them constantly, and I can't see the pots they hang in anymore! I grew them from one tiny cutting -- they root like crazy in a glass of water. Every branch seems to have an overabundance of root nubs on it. It tends to trail and can get leggy, so over the years I've trimmed them to encourage them to "round out"... when I trim the plant, I pop clippings in water and then two weeks later pass off siblings and children of them to friends and neighbors because they're so incredibly easy to maintain. "
	Khanyile, S. 2010. <i>Plectranthus verticillatus</i> . PlantZAfrica. SANBI. <a href="http://pza.sanbi.org/plectranthus-verticillatus">http://pza.sanbi.org/plectranthus-verticillatus</a> . [Accessed 11 Jul 2018]	"Pruning: Prune during late winter to allow new shoots to develop and to stimulate spring flowering."
	iGarden. 2018. <i>Plectranthus verticillatus</i> . <a href="http://www.igarden.com.au/plant-type.jsp?t=plectranthus&amp;id=199">http://www.igarden.com.au/plant-type.jsp?t=plectranthus&amp;id=199</a> . [Accessed 11 Jul 2018]	"The stems should be cut back fairly hard after flowering (or in early spring in cooler areas if there is the risk of frosts). The plant dislikes hard frosts, but if grown under a canopy of trees, will usually be well protected from milder frosts."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown

**Summary of Risk Traits:**

High Risk / Undesirable Traits

- Grows in tropical climates
- Naturalized on Oahu & Maui (Hawaiian Islands), Australia, & elsewhere
- A potential environmental weed in Australia, controlled in certain situations
- Other *Plectranthus* species are invasive
- Shade tolerant (could invade intact forest understory)
- Tolerates many soil types
- Reproduces by seeds & vegetatively by stem fragments (roots at nodes)
- Able to reach maturity in one growing season
- Spread unintentionally by disposed garden waste & intentionally cultivated
- Tolerates repeated cutting

Low Risk Traits

- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- Ornamental
- Herbicides may provide effective control