

Family: *Basellaceae*

Taxon: *Anredera cordifolia*

Synonym: *Boussingaultia cordifolia* Ten. (*basionym*) **Common Name** bridal wreath
Boussingaultia gracilis Miers Madeira-vine

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation:	H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	WRA Score	20
101	Is the species highly domesticated?			y=-3, n=0	n
102	Has the species become naturalized where grown?			y=1, n=-1	
103	Does the species have weedy races?			y=1, n=-1	
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	y
302	Garden/amenity/disturbance weed			n=0, y = 1*multiplier (see Appendix 2)	
303	Agricultural/forestry/horticultural weed			n=0, y = 2*multiplier (see Appendix 2)	y
304	Environmental weed			n=0, y = 2*multiplier (see Appendix 2)	y
305	Congeneric weed			n=0, y = 1*multiplier (see Appendix 2)	
401	Produces spines, thorns or burrs			y=1, n=0	n
402	Allelopathic			y=1, n=0	
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	
406	Host for recognized pests and pathogens			y=1, n=0	n
407	Causes allergies or is otherwise toxic to humans			y=1, n=0	n
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	y

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	y
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	
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	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	
801	Prolific seed production (>1000/m ²)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
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)	y=-1, n=1	n

Designation: H(HPWRA)

WRA Score 20

Supporting Data:

101	2010. WRA Specialist. Personal Communication.	No evidence.
201	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	Native: Brazil, Bolivia, Argentina, Paraguay, Uruguay.
202	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	Native: Brazil, Bolivia, Argentina, Paraguay, Uruguay.
203	2006. Westhuizen, L.V.D.. The evaluation of <i>Phenrica</i> sp.2 (Coleoptera: Chrysomelidae: Aktucunae), as a possible biocontrol agent for Madeira vine, <i>Anredera cordifolia</i> (Ten). Steenis in South Africa. http://eprints.ru.ac.za/496/	"In its native range, <i>A. cordifolia</i> occurs in forest, grassland, cropland, woodland and scrub with annual temperatures and rainfall ranging from 10- 30°C and 500-2000mm respectively." In South Africa, it occurs at altitudes ranging from 10-1800m.
203	2009. Dave's Garden. PlantFiles: Madeira Vine <i>Anredera cordifolia</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/32005/	USDA zones: 10a-11
204	2008. The Bishop Museum. Native and naturalized flowering plants of Hawaii - main Hawaiian Islands. The Bishop Museum, http://www.bishopmuseum.org/research/natsci/botany/dbandkeys/Main%20Islands%20Report.pdf	Naturalized on Kauai, Oahu, Molokai, Lanai, Maui and Hawaii Island.
204	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	Native: Brazil, Bolivia, Argentina, Paraguay, Uruguay. Naturalized in Australia, Mexico, New Zealand, Hawaii, Macaronesia.
205	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Widely cultivated in tropical regions.
301	2008. The Bishop Museum. Native and naturalized flowering plants of Hawaii - main Hawaiian Islands. The Bishop Museum, http://www.bishopmuseum.org/research/natsci/botany/dbandkeys/Main%20Islands%20Report.pdf	Naturalized on Kauai, Oahu, Molokai, Lanai, Maui and Hawaii Island.
301	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	Naturalized in south Europe, south Africa, temperate Asia, Australia, Mexico, New Zealand, western United States, Hawaii, Macaronesia.
302	2010. Simmonds, H.. Australian weeds and livestock. Mangrove Mountain Computer Club, http://www.weeds.mangrovemountain.net/index.html	Garden escapee. [scored as an environmental weed, see 3.04]
304	2002. West, C.J.. Eradication of alien plants on Raoul Island, Kermadec Islands, New Zealand. IUCN SSC Invasive Species Specialist Group, Gland	<i>A. cordifolia</i> is an environmental weed on Raoul Island, New Zealand. <i>A. cordifolia</i> has the potential to alter the structure and composition of the native vegetation. Eradication efforts were started in 1995.
304	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	The vine climbs into the canopies of trees and shrubs and smothers them. It forms dense infestations that crush trees and shrubs. Light enters the gap and breaks the dormancy of the tubers in or on the soil. Over time, establishment of native trees is prevented.

304	2006. Westhuizen, L.V.D.. The evaluation of <i>Phenrica</i> sp.2 (Coleoptera: Chrysomelidae: Aktucunae), as a possible biocontrol agent for Madeira vine, <i>Anredera cordifolia</i> (Ten). Steenis in South Africa. http://eprints.ru.ac.za/496/	<i>A. cordifolia</i> is considered a transformer species because of its ability to cause ecosystem level changes through the displacement of native plant species.
304	2009. Wilsons Creek Huonbrook Landcare Incorporated. <i>Anredera cordifolia</i> . Wilsons Creek Huonbrook Landcare Incorporated, http://wilsonscreeklndcare.mullum.com.au/weeds/madeira_vine.html	<i>Anredera</i> has spread along the waterways and through forests in Australia. It is considered to be the greatest threat to rainforest remnants. Its fleshy leaves and bunches of tubers make it the heaviest of the problem vines. It can break tree branches from its weight. The stem can grow one meter per week.
305	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	<i>Anredera baselloides</i> is listed as an agricultural weed in South Africa. There is no information on economic impacts or control efforts.
401	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Plants from thick rhizomes; stems usually 3-6 m long. Leaves ovate, or sometimes lanceolate, 1-11 cm long, 0.8-8 cm wide, producing small axillary tubercles at base. Racemes simple or 2-4 branched, 4-30 cm long, pedicels 1.5-2 mm long, each flower subtended by a minute persistent bract; receptacle cup-shaped by 2 persistent hyaline bracteoles, the upper 2 greenish white, broadly elliptic to suborbicular, ca. 1-2 mm long; corolla white, the lobes ovate-oblong to elliptic, 1-3 mm long; stamens white; style white, 3-cleft nearly to base."
402	2010. WRA Specialist. Personal Communication.	Unknown.
403	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Not parasitic.
404	2000. Simmonds, H./Holst, P./Bourke, C.. The palatability, and potential toxicity of Australian weeds to goats. Rural Industries Research and Development Corporation, Barton	Low palatability to goats when grown in Australia. Tubers and leaves are occasionally eaten by livestock.
405	2000. Simmonds, H./Holst, P./Bourke, C.. The palatability, and potential toxicity of Australian weeds to goats. Rural Industries Research and Development Corporation, Barton	No known risk of toxicity to goats.
405	2010. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/sites/entrez	No evidence of toxicity in PubMed.
405	2010. Simmonds, H.. Australian weeds and livestock. Mangrove Mountain Computer Club, http://www.weeds.mangrovmountain.net/index.html	Toxic to sheep, pigs, and maybe cattle. In Queensland, it is suspected of poisoning stock via drinking water, causing diarrhoea and convulsions.
405	2010. Specialized Information Services, U.S. National Library of Medicine. TOXNET Toxicology Data Network [Online Database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	No evidence of toxicity in ToxNet.
406	1996. Lai, Y.L./Hsieh, W.H./Huan, H.C./Wang, S.S.. Leaf spots of Madeira vine caused by <i>Alternaria alternata</i> in Taiwan. Plant Pathology Bulletin. 5: 193-195.	A new leaf spot disease of <i>Anredera cordifolia</i> was caused by <i>Alternaria alternata</i> in Taiwan.
406	2010. WRA Specialist. Personal Communication.	No evidence.
407	2001. Hilgert, N.I.. Plants used in home medicine in the Zenta River Basin, Northwest Argentina. Journal of Ethnopharmacology. 76: 11-34.	Stems cut into thin slices are placed on the forehead and cheeks for toothache.
407	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	The leaves and underground tubers of <i>Anredera cordifolia</i> are edible.
407	2010. Specialized Information Services, U.S. National Library of Medicine. TOXNET Toxicology Data Network [Online Database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	No evidence of toxicity in PubMed.

408	2010. Strathfield Council. Weed fact sheet: Anredera cordifolia madeira vine or lambs tails. Stathfield Municipal Council, http://www.strathfield.nsw.gov.au/system/files/f2/f36/f37/o463/WEED%20INFORMATION%20SHEET%20-%20Madeira%20Vine.pdf	Unlikely (1) Fleshy, perennial vine with succulent leaves.
409	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Shade-tolerant vine.
410	2010. Strathfield Council. Weed fact sheet: Anredera cordifolia madeira vine or lambs tails. Stathfield Municipal Council, http://www.strathfield.nsw.gov.au/system/files/f2/f36/f37/o463/WEED%20INFORMATION%20SHEET%20-%20Madeira%20Vine.pdf	Grows in sand, loam, clay, wet soil.
411	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Perennial vine. Ornamental.
412	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Perennial vine. Ornamental. [see 4.11].
501	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Perennial vine. Ornamental.
502	1999. Wagner, W. L./Herbst, D. R./Sohmer, S. H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Basellaceae
503	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Perennial vine. Ornamental.
504	2010. Strathfield Council. Weed fact sheet: Anredera cordifolia madeira vine or lambs tails. Stathfield Municipal Council, http://www.strathfield.nsw.gov.au/system/files/f2/f36/f37/o463/WEED%20INFORMATION%20SHEET%20-%20Madeira%20Vine.pdf	Anredera cordifolia has underground tubers that ensure survival after disturbance.
601	2010. WRA Specialist. Personal Communication.	No evidence.
602	1999. Swarbrick, J.T.. Seedling production by Madeira vine (Anredera cordifolia). Plant Protection Quarterly. 14: 38-39.	In 1988, 19994 and 1998, Anredera cordifolia seedlings were found below and away from existing clumps of A. cordifolia in Redwood Park Toowoomba, in Queensland, Australia. The seedlings were found in dense natural vegetation ~ one kilometer from a road or house. Seedlings demonstrate epigeal germination and may need light to germinate. Seedlings have only been found in well lit areas. Fruit set and seedling germination may only occur in Australia under favorable weather conditions. This area has a temperate climate. However, seed production may be more common than thought previously as the fruits and seeds are small and inconspicuous and the plant is seldom collected by botanists as it is difficult to dry a quality specimen. [Anredera cordifolia is not known to set seed in Hawaii. However, A. cordifolia did not produce viable seed in Australia and after a long period of sterility, some populations have produced viable seed.]
602	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Fruit has not been observed on plants of Anredera cordifolia in Hawaii.
602	2009. Wilsons Creek Huonbrook Landcare Incorporated. Anredera cordifolia. Wilsons Creek Huonbrook Landcare Incorporated, http://wilsonscreeklndcare.mullum.com.au/weed/madeira_vine.html	Flowers are not known to set seed in Australia.
603	2010. WRA Specialist. Personal Communication.	Unknown.
604	2010. WRA Specialist. Personal Communication.	Unknown.

605	2010. WRA Specialist. Personal Communication. Unknown.	
606	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Reproduces mainly from the numerous air tubers.
606	2009. Wilsons Creek Huonbrook Landcare Incorporated. Anredera cordifolia. Wilsons Creek Huonbrook Landcare Incorporated, http://wilsonscreeklndcare.mullum.com.au/weeds/madeira_vine.html	Anredera cordifolia reproduces from its aerial tubers. It can also reproduce from parts of the stem or leaves of the vine.
607	2002. Blood, K.. Weed watch warning: Madiera vine, Anredera cordifolia. Under Control Pest Plant and Animal Management News. 20: 10.NRE Frankston, Keith Turnbull Research Institute, http://www.ces.vic.gov.au/CA256F310024B628/0/6D3AF923E5554BF7CA25705B002	Growth commences in spring and can grow rapidly to 10 m in one growing season, depending on conditions. Variably shaped tubers slowly develop underground, forming a large mass. Mature stems produce aerial tubers which readily break off, fall to the ground if the stem is cut, produce shoots when they touch soil and can grow from a depth of 10 cm if buried.
607	2006. Westhuizen, L.V.D.. The evaluation of Phenrica sp.2 (Coleoptera: Chrysomelidae: Aktucunae), as a possible biocontrol agent for Madeira vine, Anredera cordifolia (Ten). Steenis in South Africa. http://eprints.ru.ac.za/496/	Fast-growing perennial vine.
701	2002. Blood, K.. Weed watch warning: Madiera vine, Anredera cordifolia. Under Control Pest Plant and Animal Management News. 20: 10.NRE Frankston, Keith Turnbull Research Institute, http://www.ces.vic.gov.au/CA256F310024B628/0/6D3AF923E5554BF7CA25705B002	Spread by : garden waste dumping, machinery, road clearing, contaminated and eroding soil.
702	2009. Wilsons Creek Huonbrook Landcare Incorporated. Anredera cordifolia. Wilsons Creek Huonbrook Landcare Incorporated, http://wilsonscreeklndcare.mullum.com.au/weeds/madeira_vine.html	Tubers are dispersed by the dumping of garden refuse.
702	2010. Desert Tropicals. Madeira vine Anredera cordifolia. Desert Tropicals, http://www.desert-tropicals.com/Plants/Basellaceae/Anredera_cordifolia.html	Widely cultivated as an ornamental vine.
703	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Fruit an indehiscent, thin-walled utricle enclosed in persistent calyx. [family description]
703	2009. Bayscience.org. Anredera cordifolia. Bayscience.org, http://bayscience.org/Plants/A/Anredera_cordifolia/	Utricles rarely producing viable seeds, style bases persistent, globose , 0.8-1.1 mm. Tubers are the main means of propagation. Seed is not produced in Hawaii.
704	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Fruit an indehiscent, thin-walled utricle enclosed in persistent calyx. [family description]
704	2009. Bayscience.org. Anredera cordifolia. Bayscience.org, http://bayscience.org/Plants/A/Anredera_cordifolia/	Utricles rarely producing viable seeds, style bases persistent, globose , 0.8-1.1 mm. [no adaptation for wind dispersal].
705	2002. Blood, K.. Weed watch warning: Madiera vine, Anredera cordifolia. Under Control Pest Plant and Animal Management News. 20: 10.NRE Frankston, Keith Turnbull Research Institute, http://www.ces.vic.gov.au/CA256F310024B628/0/6D3AF923E5554BF7CA25705B002	Water dispersal. Tubers are buoyant in both fresh and salt water.
705	2002. West, C.J.. Eradication of alien plants on Raoul Island, Kermadec Islands, New Zealand. IUCN SSC Invasive Species Specialist Group, Gland	Anredera cordifolia has infested unstable cliffs on Raoul Island, New Zealand. The tubers have the potential to be dispersed to new sites by the ocean.

705	2009. Wilsons Creek Huonbrook Landcare Incorporated. <i>Anredera cordifolia</i> . Wilsons Creek Huonbrook Landcare Incorporated, http://wilsonscreeklandcare.mullum.com.au/weeds/madeira_vine.html	Tubers are dispersed by water.
706	2002. Blood, K.. Weed watch warning: Madeira vine, <i>Anredera cordifolia</i> . Under Control Pest Plant and Animal Management News. 20: 10.NRE Frankston, Keith Turnbull Research Institute, http://www.ces.vic.gov.au/CA256F310024B628/0/6D3AF923E5554BF7CA25705B002	Seeds are possibly spread by birds.
706	2009. Bayscience.org. <i>Anredera cordifolia</i> . Bayscience.org, http://bayscience.org/Plants/A/Anredera_cordifolia/	Utricles rarely producing viable seeds, style bases persistent, globose , 0.8-1.1 mm.
707	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Fruit an indehiscent, thin-walled utricle enclosed in persistent calyx. [family description]
707	2009. Bayscience.org. <i>Anredera cordifolia</i> . Bayscience.org, http://bayscience.org/Plants/A/Anredera_cordifolia/	Utricles rarely producing viable seeds, style bases persistent, globose , 0.8-1.1 mm. [no means of attachment].
708	2010. WRA Specialist. Personal Communication.	Unknown.
801	2003. Starr, F./Starr, K./Loope, L.. <i>Anredera cordifolia</i> Madeira vine Bassellaceae. United States Geological Survey--Biological Resources Division, http://www.hear.org/Pier/pdf/pohreports/anredera_cordifolia.pdf [Cited 2009 October 12].	<i>A. cordifolia</i> can produce up to 1,500 tubers per m2. [Although tubers are not seed, they are the main method of reproduction for <i>A. cordifolia</i>].
802	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	<i>Anredera cordifolia</i> reproduces mainly from air tubers. The tubers fall to the ground and can stay viable for two years.
802	2010. Simmonds, H.. Australian weeds and livestock. Mangrove Mountain Computer Club, http://www.weeds.mangrovemountain.net/index.html	Mature stems produce tubers that are viable for up to 5 years.
803	2002. West, C.J.. Eradication of alien plants on Raoul Island, Kermadec Islands, New Zealand. IUCN SSC Invasive Species Specialist Group, Gland	An herbicide mixture of (Escort® = metsulfuron 50 g, Roundup® = glyphosate 2 l, Pulse® = penetrant plus marker dye in 100 l of water) is used to kill foliage and stems of <i>A. cordifolia</i> on Raoul Island, New Zealand. The herbicide mixture does not kill the tubers, but reduces the foliage so the tubers can be seen and removed. The tubers are resistant to herbicide. A desiccator was developed to destroy the tubers. Initial efforts to compost the tubers were not effective as the vine could grow and produce tubers faster than they could be killed.
803	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds.. CABI Publishing, Wallingford, UK	Effective chemical control is done by applying glyphosate or fluoroxypyr.

803	2005. West, H.J.. Control strategies for Madeira vine (<i>Anredera cordifolia</i>). New Zealand Plant Protection. 58: 169-173.	<p>"Metsulfuron-methyl was the most effective herbicide for controlling mature plants of Madeira vine. The herbicide appeared to translocate along vines to untreated parts of a site better than glyphosate and the triclopyr/picloram mixture, at the commonly used application rates for weed clearance used in this trial. Thus metsulfuron-methyl achieved more permanent control of the vines with the very good control of tubers preventing re-establishment of the weed. For control of regrowth from tubers, a reasonably selective treatment was sought to minimize non-target damage of species planted into sites cleared of Madeira vine. Although metsulfuron-methyl, glyphosate, triclopyr, picloram and amitrole all appear effective at killing regrowth from tubers, it is possible that fluroxypyr and tribenuronmethyl may be less damaging to some non-target species. These results confirm the findings of Prior & Armstrong (2001) regarding the effectiveness of glyphosate and fluroxypyr on Madeira vine. For the other treatments assessed in the present trial, these are the first published trial results, although West (1996) has reported some of them as being effective from anecdotal evidence. The most effective way of destroying tubers collected from plants during eradication schemes is by putting them in a freezer or oven for 24 h, or by boiling them. As Madeira vine appears not to seed in New Zealand, the use of metsulfuron-methyl on mature vines, coupled with follow-up spraying of tuber regrowth with metsulfuron-methyl, triclopyr/ picloram, glyphosate, tribenuron-methyl, fluroxypyr or amitrole has been shown to be effective" "There was almost no regeneration from vines or tubers attached to vines at sites monitored for nearly 14 months after treatment with metsulfuron-methyl. Tubers collected from treated vines 3 months after treatment had only 2% viability."</p>
804	2003. Starr, F./Starr, K./Loope, L.. <i>Anredera cordifolia</i> Madeira vine Bassellaceae. United States Geological Survey--Biological Resources Division, http://www.hear.org/Pier/pdf/pohreports/anredera_cordifolia.pdf [Cited 2009 October 12].	Control is difficult because both aboveground and underground tubers must be removed. Aerial tubers can remain viable up to 5 years after the vine is cut. [tolerates cultivation]
805	2006. Westhuizen, L.V.D.. The evaluation of <i>Phenrica</i> sp.2 (Coleoptera: Chrysomelidae: Aktucunae), as a possible biocontrol agent for Madeira vine, <i>Anredera cordifolia</i> (Ten). Steenis in South Africa. http://eprints.ru.ac.za/496/	No biological control program has been considered for <i>A. cordifolia</i> anywhere in the world. This study examined the effects of <i>Cf Phenrica</i> sp. 2 (Coleoptera: Chrysomelidae: Alticinae) on <i>A. cordifolia</i> . <i>Cf Phenrica</i> sp. 2 (Coleoptera: Chrysomelidae: Alticinae), was field collected from <i>A. cordifolia</i> in Brazil, SSW of Cascavel in the Paraná Province during a survey in November 2003. This species was tested as a biocontrol for <i>A. cordifolia</i> . Test results indicate that it could possibly be used as a biocontrol for <i>A. cordifolia</i> . Further testing is suggested.