

Family: *Malpighiaceae*

Taxon: *Lophanthera lactescens*

Synonym: *Common Name:* golden chain tree

| Questionnaire : | current 20090513 | Assessor: | Patti Clifford | Designation: L |
|-----------------|---|--------------------|--|----------------|
| Status: | Assessor Approved | Data Entry Person: | Patti Clifford | WRA Score 0 |
| 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 | 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 | n |
| 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) | n |
| 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 | |
| 405 | Toxic to animals | | y=1, n=0 | n |
| 406 | Host for recognized pests and pathogens | | y=1, n=0 | |
| 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 | n |
| 410 | Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island) | | y=1, n=0 | |
| 411 | Climbing or smothering growth habit | | y=1, n=0 | n |

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| 412 | Forms dense thickets | y=1, n=0 | |
| 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 | y=1, n=-1 | |
| 604 | Self-compatible or apomictic | y=1, n=-1 | y |
| 605 | Requires specialist pollinators | y=-1, n=0 | n |
| 606 | Reproduction by vegetative fragmentation | y=1, n=-1 | n |
| 607 | Minimum generative time (years) | 1 year = 1, 2 or 3 years = 0, 4+ years = -1 | |
| 701 | Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas) | y=1, n=-1 | |
| 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 | n |
| 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 | |
| 802 | Evidence that a persistent propagule bank is formed (>1 yr) | y=1, n=-1 | |
| 803 | Well controlled by herbicides | y=-1, n=1 | |
| 804 | Tolerates, or benefits from, mutilation, cultivation, or fire | y=1, n=-1 | |
| 805 | Effective natural enemies present locally (e.g. introduced biocontrol agents) | y=-1, n=1 | |

Designation: L

WRA Score **0**

Supporting Data:

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| 101 | 2012. WRA Specialist. Personal Communication. | [Is the species highly domesticated?? No] No evidence of domestication that reduces invasive traits. |
| 102 | 2012. WRA Specialist. Personal Communication. | [Has the species become naturalized where grown? NA] |
| 103 | 2012. WRA Specialist. Personal Communication. | [Does the species have weedy races? NA] |
| 201 | 2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl | [Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"? 2- High] Native distribution: Brazil. |
| 202 | 2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl | [Quality of climate match data? 2- High] Native distribution: Brazil. |
| 203 | 2012. Plant this. <i>Lophanthera lactescens</i> . http://www.plantthis.com/plant-information.asp?gardener=17954&tabview=design&plantSpot= | [Broad climate suitability (environmental versatility)? No] USDA Hardiness Zones: 10 - 13 |
| 203 | 2012. Southeast Growers Inc.. <i>Lophanthera lactescens</i> - Golden chain tree. http://www.southeastgrowers.com/ZA%20Lophanthera%20lactescens.htm | [Broad climate suitability (environmental versatility)? No] USDA Hardiness Zones: 10 - 12 |
| 204 | 2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl | [Native or naturalized in regions with tropical or subtropical climates? Yes] Native range: Brazil. |
| 205 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpighiaceae - <i>Lophanthera</i> . University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Does the species have a history of repeated introductions outside its natural range?? Yes] " <i>Lophanthera lactescens</i> Ducke has become popular in recent decades as an ornamental street tree. The trees grow large and flower copiously, flourishing in cities with badly polluted air, such as Manaus and Rio de Janeiro, which is interesting given the fact that the species is rare in nature, known from only a few collections in Pará, Brazil. Cultivated specimens have been seen from Madre de Dios, Peru, and from the following states of Brazil: Acre, Amazonas, Bahia, Distrito Federal, Espírito Santo, Goiás, Paraná, Rio de Janeiro, and São Paulo." |
| 205 | 2012. Southeast Growers Inc.. <i>Lophanthera lactescens</i> - Golden chain tree. http://www.southeastgrowers.com/ZA%20Lophanthera%20lactescens.htm | [Does the species have a history of repeated introductions outside its natural range?? Yes] Southeast growers has <i>Lophanthera lactescens</i> for sale. |
| 301 | 2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/ | [Naturalized beyond native range? No] No evidence. |
| 302 | 2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/ | [Garden/amenity/disturbance weed? No] No evidence. |
| 303 | 2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/ | [Agricultural/forestry/horticultural weed? No] No evidence. |
| 304 | 2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/ | [Environmental weed? No] No evidence. |
| 305 | 2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/ | [Congeneric weed? No] No evidence of congeneric weed. |

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| 401 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpighiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Produces spines, thorns or burrs? No] "Shrubs or trees; stipules intrapetiolar, 2/3 to completely connate, persistent on petiole; leaves bearing glands on petiole or immersed in abaxial surface of lamina or both. Inflorescence terminal, often pendent, an unbranched raceme of few-flowered cincinni or dichasia or a pseudoraceme of single flowers [1-flowered cincinni]; floriferous peduncles developed; bracteoles persistent, borne at or below apex of peduncle, one or more bearing 1 large terminal or abaxial gland. Sepals leaving outermost petal exposed in enlarging bud, mostly all biglandular with adjacent glands sometimes partially connate (in 1 sp. only the posterior sepals bearing 1–4 glands), the glands borne on or below free part of sepals; corolla bilaterally symmetrical, the posterior petal moderately to strongly differentiated from the lateral 4; petals yellow, pink, or white, entire or minutely denticulate, glabrous or minutely pilose on margin; androecium radially symmetrical; stamens glabrous; filaments distinct or slightly connate at base, longer opposite sepals than opposite petals; anthers alike, the outer locules bearing dark longitudinal wings; pollen 3 (4)-colporate, the colpi distally bifurcate in some spp.; receptacle glabrous or with a ring of short basifixed hairs between androecium and gynoecium; gynoecium radially symmetrical; ovary with the carpels 3, connate along a narrow to broad adaxial axis or face; styles 3, slender and subulate with minute stigmas. Cocci dorsally keeled or smooth and rounded." |
| 402 | 2012. WRA Specialist. Personal Communication. | [Allelopathic?] Unknown. |
| 403 | 2010. Nickrent, D.. The parasitic plant connection. Department of Plant Biology, Southern Illinois University, Carbondale http://www.parasiticplants.siu.edu/index.html | [Parasitic? No] Malpighiaceae. Although there is a family, Rafflesiaceae in the Malpighiales that does have three genera with parasitic plants. |
| 404 | 2012. WRA Specialist. Personal Communication. | [Unpalatable to grazing animals? Unknown] |
| 405 | 2012. National Center for Biotechnology Information. PubMed. http://www.ncbi.nlm.nih.gov/sites/entrez | [Toxic to animals? No] No evidence of toxicity. |
| 405 | 2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/ | [Toxic to animals? No] No evidence of toxicity. |
| 406 | 2012. WRA Specialist. Personal Communication. | [Host for recognized pests and pathogens? Unknown] |
| 407 | 2012. National Center for Biotechnology Information. PubMed. http://www.ncbi.nlm.nih.gov/sites/entrez | [Causes allergies or is otherwise toxic to humans? No] No evidence. |
| 407 | 2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/ | [Causes allergies or is otherwise toxic to humans? No] No evidence. |
| 408 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpighiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Creates a fire hazard in natural ecosystems? No] Rare in its natural habitat. |
| 409 | 2012. Plant this. Lophanthera lactescens. http://www.plantthis.com/plant-information.asp?gardener=17954&tabview=design&plantSpot= | [Is a shade tolerant plant at some stage of its life cycle? No] Full sun. |
| 409 | 2012. Southeast Growers Inc.. Lophanthera lactescens - Golden chain tree. http://www.southeastgrowers.com/ZA%20Lophanthera%20lactescens.htm | [Is a shade tolerant plant at some stage of its life cycle? No] Bright shade, full sun. |
| 410 | 2012. Plant this. Lophanthera lactescens. http://www.plantthis.com/plant-information.asp?gardener=17954&tabview=design&plantSpot= | [Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)?] Enriched soil, slightly acidic to slightly alkaline. |

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| 411 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpigiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Climbing or smothering growth habit? No] Shrub or small tree. |
| 412 | 2012. WRA Specialist. Personal Communication. | [Forms dense thickets? Unknown] |
| 501 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpigiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Aquatic? No] Terrestrial; shrub or small tree. |
| 502 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpigiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Grass? No] Malpigiaceae. |
| 503 | 2010. www.nationmaster.com. Encyclopedia Nitrogen fixation. Nationmaster.com, http://www.nationmaster.com/encyclopedia/Nitrogen-fixation | [Nitrogen fixing woody plant? No] No evidence of nitrogen fixation in Malpigiaceae. |
| 504 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpigiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] Shrub or small tree. |
| 601 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpigiaceae - Lophanthera. University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Evidence of substantial reproductive failure in native habitat?] Rare in nature. |
| 601 | 2012. WRA Specialist. Personal Communication. | [Evidence of substantial reproductive failure in native habitat? No] No evidence. |
| 602 | 2012. Dave's Garden Forum. Seed germination. http://davesgarden.com/community/forums/t/699710/ | [Produces viable seed? Yes] I am looking to trade for seeds to make bonsai. I have also a small number of fresh seeds of <i>Lophanthera lactescens</i> , picked this morning (03/13/2007). I will germinate some and trade the rest. |
| 602 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafaunaweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Produces viable seed? Yes] Propagation from seed, air layering, cuttings. |
| 603 | 2012. WRA Specialist. Personal Communication. | [Hybridizes naturally?] Unknown. |
| 604 | 2007. Goncalves, M.P.M./Pina-Rodrigues, F.C.M.. Sistema de reproducao de <i>Lophanthera lactescens</i> Jus (Malpigiaceae) em area de introducao. Revista Cientifica Eletronica de Engenharia Florestal. | [Self-compatible or apomictic? Yes] In this experiment on the breeding system of an introduced population of <i>Lophanthera lactescens</i> , the results indicated that the species was self-compatible with no difference in seed production from open and manual pollination. <i>L. lactescens</i> can establish populations in new areas, even in the absence of their specific pollinator. |
| 605 | 2007. Goncalves, M.P.M./Pina-Rodrigues, F.C.M.. Sistema de reproducao de <i>Lophanthera lactescens</i> Jus (Malpigiaceae) em area de introducao. Revista Cientifica Eletronica de Engenharia Florestal. | [Requires specialist pollinators? No] Self-compatible. |
| 605 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafaunaweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Requires specialist pollinators? No] Bee pollinated. |
| 606 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafaunaweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Reproduction by vegetative fragmentation? No] Propagate by seed, cuttings, air layering. |

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| 607 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafauweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Minimum generative time (years)?] Growth rate medium. |
| 607 | 2012. Plant this. <i>Lophanthera lactescens</i> . http://www.plantthis.com/plant-information.asp?gardener=17954&tabview=design&plantSpot= | [Minimum generative time (years)?] Growth rate fast. |
| 701 | 2012. WRA Specialist. Personal Communication. | [Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unknown] [grown as a roadside tree] |
| 702 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpighiaceae - <i>Lophanthera</i> . University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Propagules dispersed intentionally by people? Yes] " <i>Lophanthera lactescens</i> Ducke has become popular in recent decades as an ornamental street tree. The trees grow large and flower copiously, flourishing in cities with badly polluted air, such as Manaus and Rio de Janeiro, which is interesting given the fact that the species is rare in nature, known from only a few collections in Pará, Brazil. Cultivated specimens have been seen from Madre de Dios, Peru, and from the following states of Brazil: Acre, Amazonas, Bahia, Distrito Federal, Espírito Santo, Goiás, Paraná, Rio de Janeiro, and São Paulo." |
| 703 | 2012. WRA Specialist. Personal Communication. | [Propagules likely to disperse as a produce contaminant? No] No evidence. |
| 704 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafauweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Propagules adapted to wind dispersal? No] Schizocarp. |
| 705 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpighiaceae - <i>Lophanthera</i> . University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Propagules water dispersed? Yes] "Five species, one in Costa Rica, the other four in Amazonian South America [map]. All the species grow along rivers in wet forests or in sandy open places near rivers, and the cocci are very probably dispersed by water. Indeed, in the only widespread species, <i>L. longifolia</i> , half the volume of each coccus is filled with aerenchyma, surely an adaptation for floating." |
| 706 | 2012. Anderson, W.R./Anderson, C./Davis, C.C.. Malpighiaceae - <i>Lophanthera</i> . University of Michigan Herbarium, http://herbarium.lsa.umich.edu/malpigh/galclade/Lophanthera/Loph1.html | [Propagules bird dispersed? No] Water dispersed. |
| 706 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafauweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Propagules bird dispersed? No] Schizocarp [a dry fruit]. |
| 707 | 2012. National Parks Flora and Fauna Singapore Government. <i>Lophanthera lactescens</i> . Singapore Government, https://florafauweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3003 | [Propagules dispersed by other animals (externally)? No] Schizocarp [no means of external attachment]. |
| 708 | 2012. WRA Specialist. Personal Communication. | [Propagules survive passage through the gut? Unknown] |
| 801 | 2012. WRA Specialist. Personal Communication. | [Prolific seed production (>1000/m ²)? Unknown] |
| 802 | 2012. WRA Specialist. Personal Communication. | [Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] |
| 803 | 2012. WRA Specialist. Personal Communication. | [Well controlled by herbicides?] Unknown. |
| 804 | 2012. WRA Specialist. Personal Communication. | [Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown] |
| 805 | 2012. WRA Specialist. Personal Communication. | [Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown] |