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| Taxon: <i>Schefflera arboricola</i> (Hayata) Merr. | Family: Araliaceae |
| Common Name(s): dwarf umbrella tree miniature schefflera parasol plant | Synonym(s): Heptapleurum arboricola Hayata |

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| Assessor: Chuck Chimera | Status: In Progress | End Date: 10 Jun 2022 |
| WRA Score: 11.0 | Designation: H(HPWRA) | Rating: High Risk |

Keywords: Tropical Shrub, Naturalized, Invasive, Epiphyte, Bird-Dispersed

| 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 | y=1, n=0 | n |
| 403 | Parasitic | y=1, n=0 | n |
| 404 | Unpalatable to grazing animals | | |
| 405 | Toxic to animals | | |
| 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 | y |
| 408 | Creates a fire hazard in natural ecosystems | y=1, n=0 | n |

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| 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 | 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 | n |
| 607 | Minimum generative time (years) | | |
| 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 | y=1, n=-1 | y |
| 707 | Propagules dispersed by other animals (externally) | y=1, n=-1 | n |
| 708 | Propagules survive passage through the gut | y=1, n=-1 | y |
| 801 | Prolific seed production (>1000/m ²) | | |
| 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 | y=1, n=-1 | y |
| 805 | Effective natural enemies present locally (e.g. introduced biocontrol agents) | | |

Supporting Data:

| Qsn # | Question | Answer |
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| 101 | Is the species highly domesticated? | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | [No evidence] "Along stream banks, wet forests, sometimes epiphytic; below 900 m. Hainan, Taiwan. This species is used medicinally and as an ornamental." |

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| 102 | Has the species become naturalized where grown? | |
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | NA |

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| 103 | Does the species have weedy races? | |
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | NA |

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| 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 |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Along stream banks, wet forests, sometimes epiphytic; below 900 m. Hainan, Taiwan." [Hainan's climate is tropical and monsoonal (i.e., wet-dry). Taiwan's climate is subtropical, except for the very southern part of the island, which is tropical.] |

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| 202 | Quality of climate match data | High |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Along stream banks, wet forests, sometimes epiphytic; below 900 m. Hainan, Taiwan." [Hainan's climate is tropical and monsoonal (i.e., wet-dry). Taiwan's climate is subtropical, except for the very southern part of the island, which is tropical.] |

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| 203 | Broad climate suitability (environmental versatility) | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Along stream banks, wet forests, sometimes epiphytic; below 900 m." |
| | Dave's Garden. (2022). Schefflera Species, Hawaiian Umbrella Tree, Dwarf Umbrella Plant, Arboricola Tree. <i>Schefflera arboricola</i> . https://davesgarden.com/guides/pf/go/716/ . [Accessed 9 | "Hardiness: USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) |

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| | Jun 2022] | 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 |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Along stream banks, wet forests, sometimes epiphytic; below 900 m. Hainan, Taiwan." [Hainan's climate is tropical and monsoonal (i.e., wet-dry). Taiwan's climate is subtropical, except for the very southern part of the island, which is tropical.] |
| | Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63 | [Hawaii, Kauai, Oahu, and Maui] "This plant is popular in cultivation in all areas of the island and large, dense hedges are frequently seen flowering and fruiting. This specimen was seen growing epiphytically in the crotch of an 'ōhi'a tree near Glenwood, representing the first naturalized specimen of this species on the Big Island. large, heavily fruiting populations have been observed in the Kohala Mountains near Hāwī. This species has previously been recorded as naturalized on O'ahu and Maui (Frohlich & Lau 2010: 4; Starr et al. 2003: 24), and on Kaua'i (Frohlich & Lau this volume)." |
| 205 | Does the species have a history of repeated introductions outside its natural range? | y |
| | Source(s) | Notes |
| | Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall | "Major Pathway/s: Herbal, Ornamental Dispersed by: Humans, Escapee References: southeast Asia-W-191, United States of America-CE-617, Pacific-W-3, Global-N-85, United States of America-W-179, Pacific-E-621, New Zealand-N-823, United States of America-N-839, Australia-W-853, New Zealand-U-919, India-N-976, Australia-N-354, Gal pagos Islands-CN-1157, South Africa-I-1247, United States of America-N-1292, La Reunion-U-1321, Brazil-I-984, South Africa-CEX-895, South Africa-N-1002, Global-I-1404, Australia-E-1456, South Africa-E-1646, Global-CD-1611, India-I-1826, -I-, South Africa-N-1991, New Zealand-U-2048, United States of America-N-2092, Australia-W-1977, Brazil-W-1977, Colombia-W-1977, India-W-1977, Marshall Islands-W-1977, Samoa-W-1977, South Africa-W-1977, Tonga-W-1977." |
| 301 | Naturalized beyond native range | y |
| | Source(s) | Notes |
| | Badalamenti, E. (2021). First record of Heptapleurum arboricola Hayata (Araliaceae) as a casual non-native woody plant in the Mediterranean area. BioInvasions Record, 10(4): 805–815 | "I report here the first record of Heptapleurum arboricola Hayata (syn. Schefflera arboricola (Hayata) Merr.) (Araliaceae) as a casual non-native plant throughout the Mediterranean area. I observed the natural regeneration in urban areas at Castellammare del Golfo, a small coastal town in north-west Sicily (Mediterranean Italy). Due to the lack of self-sustaining populations and the short-term observational period, Heptapleurum arboricola should be considered as a casual species according to the classification of non-native plants. The detection of early signs of naturalization of non-native plants is of crucial importance for the management and control of invasive species. The main abiotic and biotic factors involved in the possible future spread of the species are briefly |

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| | discussed." |
| Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63 | [Hawaii island] " <i>Schefflera arboricola</i> (Hayata) Merr. New island record This plant is popular in cultivation in all areas of the island and large, dense hedges are frequently seen flowering and fruiting. This specimen was seen growing epiphytically in the crotch of an 'ōhi'a tree near Glenwood, representing the first naturalized specimen of this species on the Big Island. large, heavily fruiting populations have been observed in the Kohala Mountains near Hāwī. This species has previously been recorded as naturalized on Oahu and Maui (Frohlich & Lau 2010: 4; Starr et al. 2003: 24), and on Kaua'i (Frohlich & Lau this volume). Material examined. HAWAI'I: Puna distr. Eden roc subdivision, 2153406N, 280313E. flowering specimen rooted halfway up an 'ōhi'a tree 5 ft off the ground, roots extending down the trunk to ground, possibly strangling 'ōhi'a, 1 dec 2008, J. Parker & R. Parsons BIED51." |
| Frohlich, D. & Lau, A. (2012). New plant records for the Hawaiian islands. Bishop Museum Occasional Papers 113: 27–54 | [Kauai] "This species has previously been collected as naturalized on Maui and o'ahu (where it has subsequently been seen naturalizing widely throughout a forest bordering a botanical garden.) on Kaua'i, it was seen naturalizing along the roadside and into pastures in a residential neighborhood. elsewhere in this issue, Parker & Parsons report this species as naturalized on Hawai'i island. Material examined. KAUA'I: Kapahi. 21°56'16.4"N, 159°31'07.1"W. large shrub of 7 m, up to 20 cm basal dia. Fruiting profusely, fruit orange turning dark red when ripe. Naturalizing in pastures and hedgerows along road, 11 oct 2008, C.Trauernicht & T. Portner 582." |
| Starr, F., Starr, K.& Loope, L.L. (2003). New plant records from the Hawaiian Archipelago. Bishop Museum Occasional Papers 74: 23-34 | [Maui] "Native to Taiwan (Whistler, 2000), and not previously reported to be naturalized in the Hawaiian Islands, <i>S. arboricola</i> (dwarf umbrella tree) is widely cultivated on Maui and has recently been observed naturalizing in moist areas of Haiku on trees, fence posts, and steep banks. This common plant can be distinguished by its shrubby habit; alternate, palmately compound leaves that are similar to <i>S. actinophylla</i> (octopus tree) but smaller with six to nine oblanceolate leaflets that are leathery and dark glossy green; flowers with five small yellow petals 3–4 mm long and 5 white stamens borne on long, spreading branches of a terminal panicle; and fruits that are small orange drupes (Whistler, 2000). Material examined: MAUI: E. Maui, Hā'iku, growing as epiphyte on tree, 1250 ft [381 m], 28 Nov. 2000, Starr & Martz 001128-3." |
| Frohlich, D. & Lau, A. (2010). New plant records from O'ahu for 2008. Bishop Museum Occasional Papers 107: 3-18 | [Oahu] "Since its introduction to horticulture around 40 years ago, this plant has become very common in Hawai'i's cultivated flora. This species was recently collected as naturalized on Maui (Starr et al. 2003) and was previously found growing adventively out of the cracks in a sidewalk on O'ahu (Frohlich & Lau 2008). This collection was from an individual found growing epiphytically on a street tree and represents the first naturalized specimen for O'ahu . Material examined. O'AHU: Mililani, Kuaie St and Melehu St. (UTM 603402, 2372122), sapling ca 30 cm tall, growing with a <i>Clusia rosea</i> sapling in notch of <i>Ilex cassine</i> street tree, no flowers or fruit, 7 Feb 2008, A. Lau & D. Frohlich 2008020703." |
| Frohlich, D. & Lau, A. (2008). New plant records from O'ahu for 2007. Bishop Museum Occasional Papers 100: 3-12 | [Oahu] "This ornamental shrub or climber was introduced to horticulture in 1970 and has since become very common in Hawai'i's cultivated flora. When allowed enough space, one individual can become a massive climbing shrub 8 m tall and 13 m wide (Staples & Herbst 2005). This species was recently collected as |

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| | naturalized on Maui (Starr et al. 2003) and has been collected growing out of the cracks in a sidewalk on O'ahu, indicating it is reproductive and capable of dispersal on this island as well. Given its biological characteristics, further cultivation of this species should be discouraged. Material examined. O'AHU: Mariner's Ridge (UTM 2356084, 634405), lowland residential cultivated area, 60 cm tall juvenile growing out of a crack, several large <i>S. arboricola</i> trees in neighborhood, 200 m (660 ft), 29 Mar 2007, A. Lau & D. Frohlich 2007032903." |
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| 302 | Garden/amenity/disturbance weed | y |
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| | Source(s) | Notes |
| | Murphy, M. (2022). Plant Pono Specialist. BIISC Early Detection Technician. personal communication. 8 June | "My friend in Oceanview has a large one in her front yard. The seedlings are popping up everywhere! It is definitely invasive. " |
| | Queensland Government. (2022). Weeds of Australia. <i>Schefflera arboricola</i> . https://keyserver.lucidcentral.org/weeds . [Accessed 8 Jun 2022] | "Naturalised Distribution: Occasionally naturalised in south-eastern and northern Queensland, and possibly naturalised in the coastal districts of northern New South Wales. Also naturalised oversea in Hawaii. Notes: Dwarf umbrella tree (<i>Schefflera arboricola</i>) is a minor or potential environmental weed in Queensland and north-eastern New South Wales. |
| | Invasive Species South Africa. (2022). Dwarf umbrella tree. <i>Schefflera arboricola</i> . http://invasives.org.za . [Accessed 8 Jun 2022] | "Why is it a problem? It is shade tolerant and invades disturbed or undisturbed forests and coastal bushland. The roots are somewhat invasive and can block plumbing joints and pipes as well as damage footpaths and building foundations." |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | [A weedy tree with potential negative environmental impacts] " <i>Schefflera arboricola</i> (Hayata) Merr (Araliaceae) is widely used across the globe as an ornamental plant (Chen et al. 2002). Dwarf schefflera, as it is popularly known, is indigenous to low altitude subtropical forests in Taiwan and China (Ohashi 1993; Wu et al. 2007a), where it grows along stream banks and is sometimes an epiphyte (Wu et al. 2007b). It is considered invasive in the United States (in Hawaii and Florida), the Fiji Islands, Singapore and Brazil (Santa Catarina 2012; Ziller and Dechoum 2013; Brazil National Invasive Alien Species Database 2018). Fruits are rich in lipids and known to be consumed by birds, which potentially spread the seeds to other areas (Starr et al. 2006; Lorenzi and Souza 2008; Romahn 2009; Silva 2015)." |

| 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 |
| | Queensland Government. (2022). Weeds of Australia. <i>Schefflera arboricola</i> . https://keyserver.lucidcentral.org/weeds . [Accessed 8 Jun 2022] | "Dwarf umbrella tree (<i>Schefflera arboricola</i>) is a minor or potential environmental weed in Queensland and north-eastern New South Wales." |

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| Invasive Species South Africa. (2022). Dwarf umbrella tree. <i>Schefflera arboricola</i> . http://invasives.org.za . [Accessed 8 Jun 2022] | "Why is it a problem? It is shade tolerant and invades disturbed or undisturbed forests and coastal bushland. The roots are somewhat invasive and can block plumbing joints and pipes as well as damage footpaths and building foundations." |
| Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63 | [Possibly Yes. Potential to strangle native trees] "flowering specimen rooted halfway up an 'ōhi'a tree 5 ft off the ground, roots extending down the trunk to ground, possibly strangling 'ōhi'a" |
| Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | [Potentially Yes] " <i>Schefflera arboricola</i> (Hayata) Merr (Araliaceae) is widely used across the globe as an ornamental plant (Chen et al. 2002). Dwarf schefflera, as it is popularly known, is indigenous to low altitude subtropical forests in Taiwan and China (Ohashi 1993; Wu et al. 2007a), where it grows along stream banks and is sometimes an epiphyte (Wu et al. 2007b). It is considered invasive in the United States (in Hawaii and Florida), the Fiji Islands, Singapore and Brazil (Santa Catarina 2012; Ziller and Dechoum 2013; Brazil National Invasive Alien Species Database 2018). Fruits are rich in lipids and known to be consumed by birds, which potentially spread the seeds to other areas (Starr et al. 2006; Lorenzi and Souza 2008; Romahn 2009; Silva 2015)." |

| 305 | Congeneric weed | y |
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| | Source(s) | Notes |
| | Batianoff, G. N., & Franks, A. J. (1998). Environmental weed invasions on south-east Queensland foredunes. <i>Proceedings of the Royal Society of Queensland</i> 107: 15-34 | "The most invasive seashore weeds were <i>Asparagus aethiopicus</i> cv. <i>Sprengeri</i> , <i>Bryophyllum</i> spp., <i>Chrysanthemoides monilifera</i> [C. <i>moniliferum</i>] subsp. <i>rotundata</i> , <i>Gloriosa superba</i> , <i>Lantana camara</i> , <i>Panicum maximum</i> , <i>Schefflera actinophylla</i> , <i>Schinus terebinthifolia</i> [<i>S. terebinthifolius</i>], <i>Senna pendula</i> var. <i>glabrata</i> and <i>Wedelia trilobata</i> ." |
| | Weber, E. (2017). <i>Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds</i> . CABI Publishing, Wallingford, UK | [<i>Schefflera actinophylla</i>] "Octopus tree is a plant of rainforests, producing abundant fruits. Seeds are dispersed by frugivorous birds including introduced crows and starlings. The plant grows in full sun and in deep shade. Seedlings often grow as epiphytes on trees first, before roots come into contact with the soil. Host trees may become strangled (Motooka et al., 2003). The tree invades a number of natural habitats of high conservation value in Florida and Hawaii. It is capable of invading undisturbed rainforest due to its shade tolerance. In Florida, the tree is found in sand pine scrub, cypress stands and tropical hammocks. The plant threatens scrub pinweed (<i>Lechua cernua</i>) by shading out (Langeland and Craddock Burks, 1998). In Hawaii <i>Schefflera</i> spreads deep into forests (Motooka et al., 2003). Saplings form dense thickets, displacing other plants. Seedlings often grow in the old leaf bases of palms (Langeland and Craddock Burks, 1998)." |

| 401 | Produces spines, thorns or burrs | n |
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| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | [No evidence] "Shrubs, sometimes climbers, to 4 m tall, hermaphroditic. Petiole (6-)10-20 cm; petiolules (0.6-)1-3 cm; leaflets (5-)7-9(or 10), obovate-oblong to oblong or elliptic, 6-10(-12) × (1-)1.5-3.5(-4.5) cm, subleathery, both surfaces glabrous, secondary veins 4-6 pairs, tertiary veins distinct, base cuneate to broadly so, margin entire, apex obtuse or abruptly acute, rarely |

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| | | attenuate. Inflorescence a terminal panicle of umbels, sparsely stellate tomentose, glabrescent; primary axis to 3-8 cm; secondary axes to 10 cm; pedicels less than 1.5-3 mm. Calyx subtentire. Ovary 5- or 6-carpellate; stigmas sessile, 5 or 6. Fruit subglobose, ca. 5 mm, 5- or 6-ribbed when dry; pedicels 3-6 mm." |
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| 402 | Allelopathic | n |
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| | Source(s) | Notes |
| | Ali, K. W., Shinwari, M. I., & Khan, S. (2019). Screening of 196 medicinal plant species leaf litter for allelopathic potential. Pak. J. Bot, 51(6), 2169-2177 | [Schefflera arboricola tested but did not demonstrate significant inhibitory effects] "The taxonomic richness of medicinal plants in Pakistan can foster reasonable economic contributions through medicinal, industrial and environmental applications. The current study aims to explore allelopathic effect of medicinal plants on the germination and seedling growth of lettuce using sandwich method. In total 196 plant species had been tested using sandwich method to assess allelopathic effect of leaves leachates of different plants on Lactuca sativa L. (lettuce) seeds. The results of this study identified 4 plants having strong inhibitory effect, 14 plants with medium inhibitory and 13 plants of low inhibitory effect on the lettuce seeds. Boerhavia procumbens exhibited the strongest inhibitory allelopathic effect and Viburnum grandiflorum showed strong stimulatory effect on the growth of lettuce seeds. The diversified allelopathic effects of plants have the potential to improve weed management, sustainable agriculture, food production as well as medicinal, industrial and environmental applications." |

| 403 | Parasitic | n |
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| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Shrubs, sometimes climbers, to 4 m tall, hermaphroditic." [Araliaceae. No evidence] |

| 404 | Unpalatable to grazing animals | n |
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| | Source(s) | Notes |
| | Whyte, H. D., & Lusk, C. H. (2019). Woody debris in treefall gaps shelters palatable plant species from deer browsing, in an old growth temperate forest. Forest Ecology and Management, 448, 198-207 | [Unknown. Other Schefflera species are palatable to deer] "Four species known to be preferred by deer were widespread at our sites (Coprosmia grandifolia, Geniostoma ligustrifolium, Melicytus ramiflorus, Schefflera digitata), and several other species occurred more sporadically (Table 2)." |

| 405 | Toxic to animals | n |
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| | Source(s) | Notes |
| | Moore, S. (2022). Is the Arboricola Poisonous https://homeguides.sfgate.com/arboricola-poisonous-81607.html . [Accessed 9 Jun 2022] | [Yes, but may require ingestion, which may be rare and unlikely. Unknown if animals will consume plants] "Beloved for its star-shaped compound leaves, the dwarf schefflera (Schefflera arboricola) is often grown as a houseplant, though within its hardiness range it also makes a nice shrub or tree in the garden. Although it can't kill you, the dwarf schefflera is unfortunately |

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| | | poisonous. Warn older children away from the plants and keep an eye on smaller children and pets to make sure they don't come into serious contact with them." ... "The dwarf schefflera produces poisonous oxalates in its leaves and stems. These sharp, tiny calcium oxalate crystals produce results on the skin and mouth, when ingested, similar to the irritation ground glass would produce. Both external contact with the sap of dwarf schefflera and actually eating the plant can produce ill effects. Poisoning from actually ingesting the plant is rare, however, because actually swallowing it is painful and difficult." |
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| 406 | Host for recognized pests and pathogens | n |
| | Source(s) | Notes |
| | Gilman, E.F. & Watson, D.G. (2014). <i>Schefflera arboricola</i> : Dwarf Schefflera. ENH-744. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu .. [Accessed 9 Jun 2022] | "Pests - Scale and spider mites may be a problem when dwarf schefflera is grown indoors but outdoors pest problems are rare. Occasionally scale may infest this tree. Diseases - No diseases are of major concern." |

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| 407 | Causes allergies or is otherwise toxic to humans | y |
| | Source(s) | Notes |
| | Quattrocchi, U. (2012). <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL | "Allergic sensitivity, polyacetylenic sensitizers, reported to cause allergic contact dermatitis." |
| | Crosby, D.G. (2004). <i>The Poisoned Weed: Plants Toxic to Skin</i> . Oxford University Press, New York, New York | "Hundreds—perhaps thousands—of higher plant species have been reported to cause ACD (see Mitchell and Rook, 1979; Avalos and Maibach, 2000), only a few more of which can be mentioned here. However, because of wide and increasing use, species of the family Aralaceae require particular mention. These are familiar ornamental houseplants that include English ivy (<i>Hedera helix</i> ssp. <i>helix</i>), Algerian ivy (<i>H. helix</i> ssp. <i>canariensis</i>), schefflera (principally <i>Schefflera arboricola</i>), and fatshedra (<i>Fatschedra lizei</i> , actually a hybrid of <i>F. japonica</i> and <i>H. helix</i>). All of them contain allergenic polyacetylenes such as falcarinol (see section 6.4)." |
| | Moore, S. (2022). Is the Arboricola Poisonous https://homeguides.sfgate.com/arboricola-poisonous-81607.html . [Accessed 9 Jun 2022] | [Yes, but may require ingestion, which may be rare and unlikely] "Beloved for its star-shaped compound leaves, the dwarf schefflera (<i>Schefflera arboricola</i>) is often grown as a houseplant, though within its hardiness range it also makes a nice shrub or tree in the garden. Although it can't kill you, the dwarf schefflera is unfortunately poisonous. Warn older children away from the plants and keep an eye on smaller children and pets to make sure they don't come into serious contact with them." ... "The dwarf schefflera produces poisonous oxalates in its leaves and stems. These sharp, tiny calcium oxalate crystals produce results on the skin and mouth, when ingested, similar to the irritation ground glass would produce. Both external contact with the sap of dwarf schefflera and actually eating the plant can produce ill effects. Poisoning from actually ingesting the plant is rare, however, because actually swallowing it is painful and difficult." |

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| 409 | Is a shade tolerant plant at some stage of its life cycle | y |
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| Source(s) | Notes |
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| <p>Schiefthaler, U., Russell, A. W., Bolhàr-Nordenkampf, H. R., & Critchley, C. (1999). Photoregulation and photodamage in <i>Schefflera arboricola</i> leaves adapted to different light environments. <i>Functional Plant Biology</i>, 26(5), 485-494</p> | <p>"AB: Leaves of the subtropical understory shrub <i>Schefflera arboricola</i> growing in full sunlight had higher specific leaf weight, higher chlorophyll a/b ratios, lower total chlorophyll content and a 3-fold higher xanthophyll cycle pigment content than leaves growing in a naturally shaded, but sunfleck-punctuated, environment. In sun leaves the lowest daily current photochemical capacity (F v/F m) after 10 min dark adaptation was approximately 0.6, the change from the maximum correlating with an increase in zeaxanthin. Daily changes in zeaxanthin were partly due to de novo synthesis and turnover. It is suggested that sun leaves can dissipate most of the excess light energy absorbed safely via the photoprotective xanthophyll cycle. D1 synthesis rates did not correlate with photosynthetic photon flux density or F v/F m. The shade leaves had high F v/F m values and constant photosynthetic rates throughout the day except during sunflecks, when photosynthetic rates increased and D1 synthesis accelerated, all without a substantial decrease in F v/F m. It was concluded that leaves of <i>S. arboricola</i> adapted to natural shade conditions can use sunflecks to contribute significantly to their productivity. Leaves taken from greenhouse-grown plants of <i>S. arboricola</i> after exposure to full sunlight showed a rapid and large reduction in F v/F m (to 0.3), which neither correlated with zeaxanthin formation nor recovered within the same day. From long-term effects following full sunlight exposure of greenhouse-grown plants, it is suggested that this F v/F m reduction reflects photodestruction."</p> |
| <p>Sawwan, J. S., & Ghunem, R. S. (1999). Light acclimatization of <i>Schefflera arboricola</i>. <i>Advances in Horticultural Science</i>, 13(4): 151-155</p> | <p>"AB: <i>S. arboricola</i> is an important house plant which is greatly affected by low light levels typical in many houses. Acclimatization to low light levels during production is an important step to get good quality plants. This study was conducted to investigate the effect of acclimatization on subsequent performance of plants in a simulated interior environment. Plants (from a commercial nursery or grown from cuttings in the glasshouse) were exposed to zero, 40, 60 or 80% light exclusion for zero, 4, 8 or 12 weeks, then held for 12 weeks in a simulated interior environment (photosynthetic photon density of 3-6 micro molm-2s-1 and 25 plus or minus 1 deg C). At the end of the acclimatization period, data on chlorophyll content, and leaf surface area, weight and thickness were recorded. In the simulated interior environment, number of dropped leaflets were recorded weekly, chlorophyll content was measured at the end of this period, and plants were visually graded on a scale of 1 (poor)-10 (excellent). Chlorophyll content, as well as chlorophylls a and b and the a:b ratio increased with increasing shade levels and duration, with 80% shading for 12 weeks giving the highest values. Leaf weight and thickness were reduced when shade level and duration increased. Plants that did not receive light conditioning showed deterioration in grade and total chlorophyll content and an increasing rate of leaf drop under the simulated interior environment. There was an increase in grade and total chlorophyll content with increasing shade levels from 40 to 80% light exclusion, whereas 8 weeks of acclimatization was as good as 12 weeks. It is recommended that plants are acclimatized for 8-12 weeks under 60-80% shade. "</p> |
| <p>Rauch, F.D. & Weissich, P.R. (2000). <i>Plants for Tropical Landscapes: A Gardener's Guide</i>. University of Hawaii Press, Honolulu, HI</p> | <p>"An irregular, shrubby evergreen vine from Taiwan that grows to 20 feet or more, this species may be used in sun or shade in most soils."</p> |

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| | <p>Gilman, E.F. & Watson, D.G. (2014). <i>Schefflera arboricola</i>: Dwarf Schefflera. ENH-744. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu. [Accessed 9 Jun 2022]</p> | <p>"Dwarf schefflera is adaptable to sun, part sun or deep shade and does best on light, sandy, well-drained soils. The plant prefers soil which is kept on the dry side. One of the best hedges for shady areas."</p> |
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| 410 | <p>Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)</p> | y |
| | <p>Source(s)</p> | <p>Notes</p> |
| | <p>Rauch, F.D. & Weissich, P.R. (2000). <i>Plants for Tropical Landscapes: A Gardener's Guide</i>. University of Hawaii Press, Honolulu, HI</p> | <p>"An irregular, shrubby evergreen vine from Taiwan that grows to 20 feet or more, this species may be used in sun or shade in most soils."</p> |
| | <p>Moore, S. (2022). How Tall Is a Dwarf Schefflera https://homeguides.sfgate.com/tall-dwarf-schefflera-74995.html. [Accessed 9 Jun 2022]</p> | <p>"Schefflera requires a medium amount of water for best growth, and appreciates well-drained soil amended with peat, but it is tolerant of a wide variety of soil types."</p> |
| | <p>Gilman, E.F. & Watson, D.G. (2014). <i>Schefflera arboricola</i>: Dwarf Schefflera. ENH-744. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu. [Accessed 9 Jun 2022]</p> | <p>"Soil tolerances: clay; sand; loam; acidic; slightly alkaline; well-drained"</p> |

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| 411 | <p>Climbing or smothering growth habit</p> | y |
| | <p>Source(s)</p> | <p>Notes</p> |
| | <p>Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. <i>Bishop Museum Occasional Papers</i> 113: 55–63</p> | <p>"flowering specimen rooted halfway up an 'ōhi'a tree 5 ft off the ground, roots extending down the trunk to ground, possibly strangling 'ōhi'a"</p> |
| | <p>Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i>. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis</p> | <p>"Shrubs, sometimes climbers, to 4 m tall, hermaphroditic."</p> |

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| 412 | <p>Forms dense thickets</p> | n |
| | <p>Source(s)</p> | <p>Notes</p> |
| | <p>Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i>. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis</p> | <p>"Along stream banks, wet forests, sometimes epiphytic; below 900 m." [No evidence]</p> |
| | <p>Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. <i>Bishop Museum Occasional Papers</i> 113: 55–63</p> | <p>[No evidence at the time of publication] "This specimen was seen growing epiphytically in the crotch of an 'ōhi'a tree near Glenwood, representing the first naturalized specimen of this species on the Big Island. large, heavily fruiting populations have been observed in the Kohala Mountains near Hāwī. This species has previously been recorded as naturalized on O'ahu and Maui (Frohlich & Lau 2010: 4; Starr et al. 2003: 24), and on Kaua'i (Frohlich & Lau this volume)."</p> |
| | <p>Pratt, L., Bio, K., & Jacobi, J. (2016). Survey of roadside alien plants in Hawaii Volcanoes National Park and adjacent residential areas 2001-2005. <i>Hawai'i Cooperative Studies Unit</i>, University of Hawai'i at Hilo, Hilo, HI</p> | <p>[No evidence at time of publication] "Several species that have been documented from the park but have not yet established large populations in natural areas there were found to occur with relatively high frequencies in Mauna Loa Estates. <i>Cestrum nocturnum</i>, a shrub which is known to invade wet to mesic forests in Ka'ū and forms dense thickets under native tree canopy, occurred along 56.3% of road segments, and <i>Schefflera arboricola</i> (dwarf octopus tree), recently recognized as a naturalized species</p> |

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| | | (Starr et al. 2003), was observed on 25% of roadsides." |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | [Not documented in this publication] " <i>Schefflera arboricola</i> (Hayata) Merr (Araliaceae) is widely used across the globe as an ornamental plant (Chen et al. 2002). Dwarf schefflera, as it is popularly known, is indigenous to low altitude subtropical forests in Taiwan and China (Ohashi 1993; Wu et al. 2007a), where it grows along stream banks and is sometimes an epiphyte (Wu et al. 2007b). It is considered invasive in the United States (in Hawaii and Florida), the Fiji Islands, Singapore and Brazil (Santa Catarina 2012; Ziller and Dechoum 2013; Brazil National Invasive Alien Species Database 2018)." |

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| 501 | Aquatic | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | [Terrestrial or epiphytic] "Along stream banks, wet forests, sometimes epiphytic; below 900 m." |

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| 502 | Grass | n |
| | Source(s) | Notes |
| | USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Jun 2022] | "Family: Araliaceae Subfamily: Aralioideae" |

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| 503 | Nitrogen fixing woody plant | n |
| | Source(s) | Notes |
| | USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Jun 2022] | "Family: Araliaceae Subfamily: Aralioideae" |

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| 504 | Geophyte (herbaceous with underground storage organs - bulbs, corms, or tubers) | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Shrubs, sometimes climbers, to 4 m tall, hermaphroditic." |

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| 601 | Evidence of substantial reproductive failure in native habitat | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of</i> | [No evidence] "Along stream banks, wet forests, sometimes |

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| China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | epiphytic; below 900 m. Hainan, Taiwan. This species is used medicinally and as an ornamental." |
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| 602 | Produces viable seed | y |
|-----|---|---|
| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | "In the germination test, 67.2% (n = 293) of the total number of seeds germinated (n = 436; 218 seeds per treatment). Of 218 seeds sowed in each treatment, 57.7% (n = 126) of the seeds germinated in the treatment with frugivory and 76.6% (n = 167) germinated in the treatment without frugivory." |
| | Gilman, E.F. & Watson, D.G. (2014). <i>Schefflera arboricola</i> : Dwarf <i>Schefflera</i> . ENH-744. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu .. [Accessed 9 Jun 2022] | "Propagation is by seed, cuttings, or air-layers." |

| 603 | Hybridizes naturally | |
|-----|--|----------------------------|
| | Source(s) | Notes |
| | WRA Specialist. (2022). Personal Communication | Unknown. No evidence found |

| 604 | Self-compatible or apomictic | |
|-----|---|--|
| | Source(s) | Notes |
| | Pei, N., Luo, Z., Schlessman, M. A., & Zhang, D. (2011). Synchronized protandry and hermaphroditism in a tropical secondary forest tree, <i>Schefflera heptaphylla</i> (Araliaceae). <i>Plant systematics and evolution</i> , 296(1), 29-39 | [Unknown. Another hermaphroditic species is self-compatible, but self-pollination does not occur] "Our pollination experiments showed that <i>S. heptaphylla</i> does not produce asexual fruits and that it is genetically self-compatible and capable of self-fertilization. However, our extensive observations of both intra- and interfloral dichogamy suggest that autogamous self-pollination never occurs and that opportunities for geitonogamous self-pollination are rare." |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | [Unknown. Possible with hermaphroditic flowers] "Shrubs, sometimes climbers, to 4 m tall, hermaphroditic. Petiole (6-)10-20 cm; petiolules (0.6-)1-3 cm; leaflets (5-)7-9(or 10), obovate-oblong to oblong or elliptic, 6-10(-12) × (1-)1.5-3.5(-4.5) cm, subleathery, both surfaces glabrous, secondary veins 4-6 pairs, tertiary veins distinct, base cuneate to broadly so, margin entire, apex obtuse or abruptly acute, rarely attenuate. Inflorescence a terminal panicle of umbels, sparsely stellate tomentose, glabrescent; primary axis to 3-8 cm; secondary axes to 10 cm; pedicels less than 1.5-3 mm. Calyx subtentire. Ovary 5- or 6-carpellate; stigmas sessile, 5 or 6." |

| 605 | Requires specialist pollinators | n |
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| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Inflorescence a terminal panicle of umbels, sparsely stellate tomentose, glabrescent; primary axis to 3-8 cm; secondary axes to 10 cm; pedicels less than 1.5-3 mm. Calyx subtentire. Ovary 5- or 6-carpellate; stigmas sessile, 5 or 6." [Suggests insect pollination] |
| | Flora Fauna Web. (2022). <i>Heptapleurum actinophyllum</i> . | "Pollination Method(s) Biotic (Fauna) (Insects (Butterfly, Moth), |

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| | https://www.nparks.gov.sg/florafaunaweb/flora/3/1/3115 . [Accessed 10 Jun 2022] | Vertebrates (Bird))" |
| 606 | Reproduction by vegetative fragmentation | n |
| | Source(s) | Notes |
| | Souza, B. M. D. (2019). Potencial de invasão associado à dispersão por aves: <i>Schefflera arboricola</i> (Hayata) merr no entorno do Parque Estadual da Serra do Tabuleiro (Santa Catarina, Brasil. Master's Thesis. Universidade Federal de Santa Catarina, Florianópolis | "Traits that confirm the high invasiveness of <i>S. arboricola</i> were: seed dispersal by birds; the ability of establishment in different substrate types along the vertical stratification of the forest; high percentage of seed germination; early germination after bird gut passage; and extended flowering and fruiting during the year." |
| 607 | Minimum generative time (years) | |
| | Source(s) | Notes |
| | Gilman, E.F. & Watson, D.G. (2014). <i>Schefflera arboricola</i> : Dwarf <i>Schefflera</i> . ENH-744. Revised. University of Florida, IFAS, Gainesville, FL. http://edis.ifas.ufl.edu .. [Accessed 10 Jun 2022] | "Height: 10 to 15 feet" ... "Growth rate: moderate" [Time to maturity unknown] |
| 701 | Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas) | n |
| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | "Our results show that frugivory and seed dispersal by native birds increase the establishment of <i>S. arboricola</i> ." |
| 702 | Propagules dispersed intentionally by people | y |
| | Source(s) | Notes |
| | Rauch, F.D. & Weissich, P.R. (2000). <i>Plants for Tropical Landscapes: A Gardener's Guide</i> . University of Hawaii Press, Honolulu, HI | "An irregular, shrubby evergreen vine from Taiwan that grows to 20 feet or more, this species may be used in sun or shade in most soils. It has good wind and drought tolerance and makes a good hedge, enclosure, or screen plant and an excellent container plant for the deck, lanai, or interior. It can be trained as a dense espalier or readily pruned to maintain a shrubby habit." |
| | Starr, F., Starr, K. & Loope, L.L. (2003). New plant records from the Hawaiian Archipelago. <i>Bishop Museum Occasional Papers</i> 74: 23-34 | "Native to Taiwan (Whistler, 2000), and not previously reported to be naturalized in the Hawaiian Islands, <i>S. arboricola</i> (dwarf umbrella tree) is widely cultivated on Maui and has recently been observed naturalizing in moist areas of Haiku on trees, fence posts, and steep banks." |
| 703 | Propagules likely to disperse as a produce contaminant | n |
| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | [No evidence] "Given the intensive horticultural use of <i>S. arboricola</i> and seed dispersal interactions with generalist birds, there is an imminent risk of invasion in forest remnants close to wherever <i>S. arboricola</i> is cultivated. We recommend that adult plants of <i>S. arboricola</i> are eliminated from gardens and semi-natural areas |

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| | | close to protected areas as a prevention measure to avoid invasions and impacts on natural habitats." |
| 704 | Propagules adapted to wind dispersal | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Fruit subglobose, ca. 5 mm, 5- or 6-ribbed when dry" |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | "Our results show that frugivory and seed dispersal by native birds increase the establishment of <i>S. arboricola</i> ." |
| 705 | Propagules water dispersed | |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis | "Along stream banks, wet forests, sometimes epiphytic" [Bird dispersed, but occurrence along streams might contribute to secondary dispersal of fallen fruits and seeds] |
| 706 | Propagules bird dispersed | y |
| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | "An assessment of the habitats where <i>S. arboricola</i> seeds were dropped by birds showed that the species established on various types of substrate and that the movement of birds in the landscape facilitates the spread of seeds between habitats where germination may be favored. Most birds observed feeding on <i>S. arboricola</i> fruits occupy different habitats (Table 1). <i>Tangara sayaca</i> and <i>T. leucomelas</i> are especially recognized for using the most varied habitat types, including small forest fragments, hedges, isolated trees and pastures (e.g. Pizo 2004). These species are considered important for moving seeds around (Pizo 2012). Birds of the genus <i>Tangara</i> are also capable of flying long gap distances, crossing fragments up to 425 meters away (personal communication). The probability of a <i>S. arboricola</i> seed to be dropped on a favorable substrate and subsequently establish a nascent invasion focus is therefore increased." |
| | Souza, B. M. D. (2019). Potencial de invasão associado à dispersão por aves: <i>Schefflera arboricola</i> (Hayata) merr no entorno do Parque Estadual da Serra do Tabuleiro (Santa Catarina, Brasil). Master's Thesis. Universidade Federal de Santa Catarina, Florianópolis | "Traits that confirm the high invasiveness of <i>S. arboricola</i> were: seed dispersal by birds; the ability of establishment in different substrate types along the vertical stratification of the forest; high percentage of seed germination; early germination after bird gut passage; and extended flowering and fruiting during the year." |
| 707 | Propagules dispersed by other animals (externally) | n |
| | Source(s) | Notes |
| | Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2007). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. | "Fruit subglobose, ca. 5 mm, 5- or 6-ribbed when dry" [No means of attachment] |

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| Louis | |
| Nakamoto, A., Kinjo, K., & Izawa, M. (2009). The role of Orii's flying fox (<i>Pteropus dasymallus inopinatus</i>) as a pollinator and a seed disperser on Okinawa-jima Island, the Ryukyu Archipelago, Japan. <i>Ecological research</i> , 24(2), 405-414 | "Table 2 Dispersal types of seeds and characteristics of fruits used by Orii's flying-foxes on Okinawa-jima Island" [Dispersal types - <i>Schefflera arboricola</i> Dropped by flying foxes, which are absent in the Hawaiian Islands] |

| 708 | Propagules survive passage through the gut | y |
|-----|---|---|
| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | "An assessment of the habitats where <i>S. arboricola</i> seeds were dropped by birds showed that the species established on various types of substrate and that the movement of birds in the landscape facilitates the spread of seeds between habitats where germination may be favored." |
| | Souza, B. M. D. (2019). Potencial de invasão associado à dispersão por aves: <i>Schefflera arboricola</i> (Hayata) merr no entorno do Parque Estadual da Serra do Tabuleiro (Santa Catarina, Brasil. Master's Thesis. Universidade Federal de Santa Catarina, Florianópolis | "We assessed fruit and seed production, assessed the reproductive phenology of the species, investigated the interactions of frugivory by birds and also evaluated seed germination with and without bird gut passage. Traits that confirm the high invasiveness of <i>S. arboricola</i> were: seed dispersal by birds; the ability of establishment in different substrate types along the vertical stratification of the forest; high percentage of seed germination; early germination after bird gut passage; and extended flowering and fruiting during the year." |

| 801 | Prolific seed production (>1000/m2) | |
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| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | [Potentially Yes] "Each fruit contained 5.86 (SD = ± 0.19) seeds on average whereas each reproductive branch bore 456.11 (± 222.06) fruits. As a consequence, each branch had a mean of 2672.8 seeds. The means of seed measurements were 0.23 (± 0.01) cm in width, 0.36 (± 0.01) cm in length, 0.07 (± 0.02) cm in thickness, and 0.0034 g in dry mass. Maximum fruit production observed at the fruiting peak was 196 branches with fruits in a single individual. Conversely, individuals with the lowest fruit production had between one and six reproductive branches during the period of low fruiting. On average, <i>S. arboricola</i> plants sampled offered between 456.11 and 89,397.56 fruits during one reproductive season in the study area." |

| 802 | Evidence that a persistent propagule bank is formed (>1 yr) | |
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| | Source(s) | Notes |
| | Marciniak, B., De Sa Dechoum, M., & Castellani, T. T. (2020). The danger of non-native gardens: risk of invasion by <i>Schefflera arboricola</i> associated with seed dispersal by birds. <i>Biological Invasions</i> , 22(3), 997-1010 | "The seeds are orthodox and able to germinate on trees, rocks, or soil" [Seed bank longevity unknown] |

| 803 | Well controlled by herbicides | |
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| | Source(s) | Notes |
| | Allonsy, A. (2022). The Removal of <i>Schefflera</i> . | "1. Dilute a 41 percent glyphosate product, commonly sold as |

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| <p>https://homeguides.sfgate.com/removal-schefflera-73734.html. [Accessed 10 Jun 2022]</p> | <p>"ultra" or "extra-strength," at a rate of 1 part herbicide to 1 part water. Put the mixture in a garden sprayer. You can also use a ready-to-use glyphosate product with a strength of 18 to 23 percent. Wear gloves, a long-sleeved shirt and protective eyewear when working with herbicides.</p> <p>2. Cut the schefflera back to the ground, leaving about 6 inches of the main trunk protruding from the ground. Only attempt to cut down scheffleras less than 25 feet tall. Use lopping shears for small scheffleras.</p> <p>3. Drill a 1/2-inch diameter holes straight down into the top of the trunk. Skip this step for smaller varieties with small, non-woody stems. Peel the bark away from the cut, leaving 1 to 2 inches of bare trunk immediately below where you cut the schefflera.</p> <p>4. Spray the herbicide on the exposed, cut surface of the stump, as well as the bare sides where you stripped the bark. Hold a piece of cardboard against the side of the stump as you spray to catch runoff so it doesn't soak into the soil.</p> <p>5. Fill any drilled holes with the herbicide solution. Allow about one hour for the herbicide to drain into the stump, then fill the holes a second time.</p> <p>6. Cover the stump with a plastic bag to prevent the water in the herbicide from evaporating. Allow about 10 to 14 days for the herbicide to take effect. If root suckers sprout, indicating that the roots are still alive, make a fresh cut across the stump and reapply the herbicide.</p> <p>7. Cut the stump back to the ground when it is brown and dead. Alternatively, you can dig up the root system to clear the space for new plants. Use a shovel, mattock and garden hoe to pick through the soil and dig up the roots. Dispose of the trunk and roots in a yard waste bin."</p> |
| <p>Weber, E. (2017). <i>Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds</i>. CABI Publishing, Wallingford, UK</p> | <p>"Seedlings and young saplings can be hand-pulled. Basal bark application and cut stump application of triclopyr is moderately effective, but it is better to apply herbicide into notches cut into the cambium. Seedlings can be sprayed with glyphosate or triclopyr (Motooka et al., 2003; Englberger, 2009)." [Unknown. Methods to control the invasive <i>Schefflera actinophylla</i> may be effective in controlling <i>Schefflera arboricola</i>, if necessary]</p> |
| <p>CABI. (2022). <i>Invasive Species Compendium</i>. Wallingford, UK: CAB International. www.cabi.org/isc</p> | <p>[Unknown. Related <i>S. actinophylla</i> difficult to control with herbicides]</p> <p>"<i>S. actinophylla</i> is very difficult to control with herbicides (Thayer, 1998). Effects of herbicide may not be seen for months, and follow-up treatments are necessary. When this species is growing as an epiphyte, herbicide applications require care to avoid damaging host plants. N-phosphonomethyl-glycine (glyphosate) or 3,5,6-trichloro-2-pyridinyl-oxy acetic acid (triclopyr) can be used as foliar applications on seedlings and young plants. In the case of larger trees, it is recommended to cut notches into the cambium around the stem and apply undiluted glyphosphate or triclopyr (Englberger, 2009), or to cut and then treat the stumps with the following herbicides:</p> <p style="padding-left: 20px;">N-phosphonomethyl-glycine (glyphosate): apply on cut stump, or paint basal green bark</p> <p style="padding-left: 20px;">3,5,6-trichloro-2-pyridinyl-oxy acetic acid (triclopyr) + 4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid (picloram): apply on basal bark</p> <p>Repeated applications of herbicides are necessary in order to avoid re-sprouts (Motooka et al., 2003; Englberger, 2009). "</p> |

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| 804 | Tolerates, or benefits from, mutilation, cultivation, or fire | y |
| | Source(s) | Notes |
| | Rauch, F.D. & Weissich, P.R. (2000). Plants for Tropical Landscapes: A Gardener's Guide. University of Hawaii Press, Honolulu, HI | "It can be trained as a dense espalier or readily pruned to maintain a shrubby habit." |
| | Allonsy, A. (2022). The Removal of Schefflera. https://homeguides.sfgate.com/removal-schefflera-73734.html . [Accessed 10 Jun 2022] | "The plants survive severe pruning and will grow back if cut to ground level. This persistence means cutting a schefflera is not enough to completely remove it -- you must kill the plant roots." |

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| 805 | Effective natural enemies present locally (e.g. introduced biocontrol agents) | |
| | Source(s) | Notes |
| | Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63 | [Unknown, but limiting factors do not appear to be limiting its spread] "This plant is popular in cultivation in all areas of the island and large, dense hedges are frequently seen flowering and fruiting. This specimen was seen growing epiphytically in the crotch of an 'ōhi'a tree near Glenwood, representing the first naturalized specimen of this species on the Big Island. large, heavily fruiting populations have been observed in the Kohala Mountains near Hāwī. This species has previously been recorded as naturalized on O'ahu and Maui (Frohlich & Lau 2010: 4; Starr et al. 2003: 24), and on Kaua'i (Frohlich & Lau this volume)." |

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives and spreads in regions with tropical climates
- Naturalized on Kauai, Oahu, Maui and Hawaii (Hawaiian Islands) and elsewhere in the wet tropics
- An invasive tree in Australia, South Africa and Hawaii, with growing evidence that it will negatively impact natural ecosystems
- Other *Schefflera* species are invasive
- Causes dermatitis, and may be toxic to animals and people if ingested
- Can grow in full sun to shade
- Tolerates many soil types
- May grow epiphytically, and roots could strangle host trees like 'ōhi'a
- Reproduces by potentially prolific seed production
- Seeds dispersed by birds, and through intentional cultivation
- Tolerates and will grow back after repeated cutting and severe pruning

Low Risk Traits

- Use as an indoor plant eliminates invasion risk
- Unarmed (no spines, thorns, or burrs)
- Not documented to be allelopathic
- Herbicides may provide effective control