

Family: *Araliaceae*

Taxon: *Schefflera heptaphylla*

Synonym: *Schefflera octophylla* (Lour.) Harms
Vitis heptaphylla L. (basionym)

Common Name: Ivy Tree
e zhang chai
uka-no-ki

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation: EVALUATE
Status:	Assessor Approved	Data Entry Person:	Assessor	WRA Score 4
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	n
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)	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)	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		y=1, n=-1	n
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	
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	

411	Climbing or smothering growth habit	y=1, n=0	n
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	
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	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	y=1, n=-1	n
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/m2)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
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: EVALUATE

WRA Score 4

Supporting Data:

101	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Is the species highly domesticated? No] No evidence
101	2011. World Agroforestry Centre. Agroforestry Tree Database - Schefflera heptaphylla. PROSEA, http://www.worldagroforestrycentre.org/sea/products/afdbases/af/asp/SpeciesInfo.asp?SpID=18119	[Is the species highly domesticated? No] "In the light of recent taxonomical insight, the species known almost universally since the 1890s as Schefflera octophylla (Lour.) Harms should be called <i>S. heptaphylla</i> (L.) Frodin. It is a renowned medicinal plant from Indo-China, southern China, Taiwan and the Ryukyu Islands."
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Species suited to tropical or subtropical climate(s) 2-high] "Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, SE Xizang, Yunnan, S Zhejiang [India, Japan, Thailand, Vietnam]."
202	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Quality of climate match data? 2-high] "Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, SE Xizang, Yunnan, S Zhejiang [India, Japan, Thailand, Vietnam]."
203	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Broad climate suitability (environmental versatility)? Yes] "Evergreen broad-leaved forests on mountain slopes; 100-2100 m" [elevation range exceeds 1000 m, demonstrating environmental versatility]
203	2011. World Agroforestry Centre. Agroforestry Tree Database - Schefflera heptaphylla. PROSEA, http://www.worldagroforestrycentre.org/sea/products/afdbases/af/asp/SpeciesInfo.asp?SpID=18119	[Broad climate suitability (environmental versatility)? Yes] " <i>S. heptaphylla</i> is found in relatively open forest and forest edges. In southernmost Japan it occurs near sea-level; in the Ryukyu Islands up to 600 m elevation. Southward in the tropics its maximum altitude rises to 1200(1400) m, or it even becomes entirely montane. Its distribution corresponds with the 20 deg. C average January isotherm. Exploited from wild sources as well as from cultivation, this species can probably be grown easily at higher elevations in the Malaysian region. Burma (Myanmar), Thailand, Indo-China, the Philippines (Batan Island), southern China, Taiwan, the Ryukyu Islands and southern most Japan."
204	2011. Pei, N./Luo, Z./Schlessman, M.A./Zhang, D.. Synchronized protandry and hermaphroditism in a tropical secondary forest tree, <i>Schefflera heptaphylla</i> (Araliaceae). <i>Plant Systematics and Evolution</i> . 296: 29–39.	[Native or naturalized in regions with tropical or subtropical climates? Yes] " <i>Schefflera heptaphylla</i> (L.) Frodin (Araliaceae), the "ivy tree," is a winter-flowering species common in tropical or subtropical evergreen broadleaved forests. It is widely distributed in Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Xizang, Yunnan, Zhejiang, and Taiwan in China, and also in the neighboring countries India, Japan, Thailand, and Vietnam (He and Zeng 1974; Xiang and Lowry 2007)."
205	2011. WRA Specialist. Personal Communication.	[Does the species have a history of repeated introductions outside its natural range? No] No evidence found of repeated introductions
301	2011. Lau, A./Frolich, D.. Oahu Early Detection - Early Detection finds- Likeke trail and Ho'omaluhia- 10.17.11-10.24.11. Unpublished report.	[Naturalized beyond native range? Presumably yes] "This species is very rarely grown on O'ahu, perhaps only occurring in botanical gardens. It was collected in 1992 at Ho'omaluhia by Derral Herbst who at that time noted it "escapes all over the garden and is becoming weedy." We are awaiting comment from a taxonomic expert regarding accuracy of the name and our concept of sapling identity/morphology, but believe we did observe what appeared to be a range of leaflet morphology grading from highly dissected saplings to adults with entire, undulate margins. As long as these concepts are accurate, this species shows ability to spread throughout the garden and if garden resources allow may make a good candidate for garden staff to control where seen. Most spread is in or near the garden so far, particularly in areas near the Malaysian section, though a single mature individual was seen in secondary forest along the mauka portion of the Likelike highway during an OED roadsurvey. "
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 evidence to date]
304	2011. Lau, A./Frolich, D.. Oahu Early Detection - Early Detection finds- Likeke trail and Ho'omaluhia- 10.17.11-10.24.11. Unpublished report.	Environmental weed? Potentially] "This species is very rarely grown on O'ahu, perhaps only occurring in botanical gardens. It was collected in 1992 at Ho'omaluhia by Derral Herbst who at that time noted it "escapes all over the garden and is becoming weedy." We are awaiting comment from a taxonomic expert regarding accuracy of the name and our concept of sapling identity/morphology, but believe we did observe what appeared to be a range of leaflet morphology grading from highly dissected saplings to adults with entire, undulate margins. As long as these concepts are accurate, this species shows ability to spread throughout the garden and if garden resources allow may make a good candidate for garden staff to control where seen. Most spread is in or near the garden so far, particularly in areas near the Malaysian section, though a single mature individual was seen in secondary forest along the mauka portion of the Likelike highway during an OED roadsurvey. The abundance of its congener <i>S. actinophylla</i> in windward O'ahu as well as island wide leaves an early detection botanist wondering what this species is capable of. The name will be submitted to the WRA specialists for evaluation. It is possible this species is too widespread for it to be recommended for OISC control. OED will consider adding it to our survey list. Threat of the species and interest from garden staff will have to outweigh the logistical issues adding a species does to our data."
305	1985. Smith, C.W.. Impact of Alien Plants on Hawaii's Native Biota. Pp. 180-250 in Stone & Scott (eds.). Hawaii's terrestrial ecosystems: preservation & management. CPSU, Honolulu, HI	[Congeneric weed? Yes] "This fast-growing, evergreen tree with few branches reaches heights of 15 m. It is a shade tolerant plant capable of invading undisturbed forests. The seeds are dispersed by alien frugivorous birds. It is not tolerant of fire. It has not been evaluated for biological control." [<i>Schefflera actinophylla</i>]
305	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Congeneric weed? Yes] " <i>Schefflera actinophylla</i> ... Once established, the tree forms dense and shady thickets, outcompeting native plant species."
305	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	[Congeneric weed? Yes] " <i>Schefflera actinophylla</i> ... It is now extensively naturalized and rapidly spreading and is without question one of the worst weed trees currently invading the wet forests in the Hawaiian Islands."
401	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Produces spines, thorns or burrs? No] "Trees, to 15 m tall, andromonoecious. Petiole (5-)10-30 cm; petiolules 1.5-5 cm; leaflets 6-9(-11), elliptic to oblongelliptic or obovate-elliptic, 7-18 x 3-5 cm, papery to leathery, densely stellate pubescent when young, glabrescent except on midvein and in axils of veins, secondary veins 7-10 pairs, tertiary veins inconspicuous, base attenuate or cuneate to obtuse or rounded, margin entire, often serrate or pinnately lobed on young plants, apex abruptly acute to acuminate."
402	2011. World Agroforestry Centre. Agroforestry Tree Database - <i>Schefflera heptaphylla</i> . PROSEA, http://www.worldagroforestrycentre.org/sea/products/afdbases/af/asp/SpeciesInfo.asp?SpID=18119	[Allelopathic? No] "Soil improver: The leaves and young branches are used as green manure." [No evidence]
403	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Parasitic? No] "Trees, to 15 m tall" [Araliaceae]
404	2003. Kuo, C.-C./Lee, L.-L.. Food Availability and Food Habits of Indian Giant Flying Squirrels (<i>Petaurista philippensis</i>) in Taiwan. Journal of Mammalogy. 84(4): 1330-1340.	[Unpalatable to grazing animals? No] "We assessed seasonal variation in food habits of Indian giant flying squirrels (<i>Petaurista philippensis</i>) and food availability at Fushan Experimental Forest in Taiwan." [Table 1 indicates that young leaves, fruits, flowers and petioles of the leaves of <i>S. heptaphylla</i> are consumed]

404	2004. Tsujino, R./Yumoto, T.. Effects of sika deer on tree seedlings in a warm temperate forest on Yakushima Island, Japan. Ecological Research. 19: 291–300.	[Unpalatable to grazing animals? No] "High-density herbivore species often play an important role in forest regeneration. Native sika deer (<i>Cervus nippon yakushimae</i>) inhabit a high density (51.5–63.8 head/km ² , estimated by a pellet count method) area in the western part of a lowland natural forest on Yakushima Island, Japan. To test experimentally the impact of sika deer on the mortality and the survivability of current-year seedlings, which are at a more vulnerable stage than the later stages, we constructed fenced exclosures, planted seeds of nine sapfruit tree species and compared the mortality and the survivability of current-year seedlings between fenced and unfenced quadrats. Large seeded species had significantly greater survivability in fenced quadrats than in unfenced quadrats. However, the survivability disagreed with feeding preferences. Sika deer activity increased seedling mortality of large seeded species more than that of small seeded species, and did not decrease much seedling survivability of not-preferred species. We found that the physical disturbance by the high density of sika deer resulted in mortality for both preferred and not-preferred species, and that deer herbivory was important for preferred species." [This study examined the browsing preference of Sitka deer on the Yakushima Island, Japan. The seedlings of <i>Schefflera octophylla</i> were one of the preferred browsing species.]
405	2003. Kuo, C.-C./Lee, L.-L.. Food Availability and Food Habits of Indian Giant Flying Squirrels (<i>Petaurista philippensis</i>) in Taiwan. Journal of Mammalogy. 84(4): 1330-1340.	[Toxic to animals? No] "We assessed seasonal variation in food habits of Indian giant flying squirrels (<i>Petaurista philippensis</i>) and food availability at Fushan Experimental Forest in Taiwan." [Table 1 indicates that young leaves, fruits, flowers and petioles of the leaves of <i>S. heptaphylla</i> are consumed. No evidence of toxicity]
405	2004. Tsujino, R./Yumoto, T.. Effects of sika deer on tree seedlings in a warm temperate forest on Yakushima Island, Japan. Ecological Research. 19: 291–300.	[Toxic to animals? No] "High-density herbivore species often play an important role in forest regeneration. Native sika deer (<i>Cervus nippon yakushimae</i>) inhabit a high density (51.5–63.8 head/km ² , estimated by a pellet count method) area in the western part of a lowland natural forest on Yakushima Island, Japan. To test experimentally the impact of sika deer on the mortality and the survivability of current-year seedlings, which are at a more vulnerable stage than the later stages, we constructed fenced exclosures, planted seeds of nine sapfruit tree species and compared the mortality and the survivability of current-year seedlings between fenced and unfenced quadrats. Large seeded species had significantly greater survivability in fenced quadrats than in unfenced quadrats. However, the survivability disagreed with feeding preferences. Sika deer activity increased seedling mortality of large seeded species more than that of small seeded species, and did not decrease much seedling survivability of not-preferred species. We found that the physical disturbance by the high density of sika deer resulted in mortality for both preferred and not-preferred species, and that deer herbivory was important for preferred species." [This study examined the browsing preference of Sitka deer on the Yakushima Island, Japan. The seedlings of <i>Schefflera octophylla</i> were one of the preferred browsing species. No evidence of toxicity]
406	2011. WRA Specialist. Personal Communication.	[Host for recognized pests and pathogens? Unknown]
407	2004. Crosby, D.G.. The poisoned weed: plants toxic to skin. Oxford University Press, New York	[Causes allergies or is otherwise toxic to humans? Unknown] "Rash-producing constituents are present in such garden favorites as ... <i>schefflera</i> (Araliaceae), ..." [Unknown which species contain these constituents, or whether only certain people are susceptible]
407	2009. Li, Y.-L./Yeung, C.-M./Chiu, L.C.M./Cen, Y.-Z./Ooi, V.E.C.. Chemical Composition and Antiproliferative Activity of Essential Oil from the Leaves of a Medicinal Herb, <i>Schefflera heptaphylla</i> . Phytotherapy Research. 23: 140–142.	[Causes allergies or is otherwise toxic to humans? Unknown] " <i>Schefflera heptaphylla</i> (L.) Frodin (Araliaceae) is a medicinal plant used traditionally as a tonic and antiinflammatory medicine in Southeast Asia and Southern China (Kitajima et al., 1990; Sung and Adam, 1991). In Hong Kong, <i>S. heptaphylla</i> is a principal ingredient of the herbal health tea formulation widely used for the treatment of the common cold (Kong, 2000). In the process of our investigation of the antiviral activity of <i>S. heptaphylla</i> (Li et al., 2004; Li et al., 2007), it was found that the volatile constituents of <i>S. heptaphylla</i> had significant antiproliferative activity against several cancer cell lines in vitro."
407	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? Unknown] No evidence of toxicity in PubMed.
408	2000. Hau, B.C.H.. Promoting native tree species in land rehabilitation in Hong Kong, China. Pp. 109-120 in Elliott, S. et al. (eds.). Forest Restoration for Wildlife Conservation. Int. Trop. Timber Org. & The Forest Rest. Research Unit, Chiang Mai Univ.,	[Creates a fire hazard in natural ecosystems? No] "In addition, a number of native species are commonly used in South China in green belts for fire prevention. They include <i>Castanopsis fissa</i> , <i>Liquidambar formosana</i> , <i>Quercus myrsinaefolia</i> , <i>Syzygium cumini</i> , <i>Viburnum odoratissimum</i> , <i>Homalium cochinchinensis</i> , <i>Machilus thunbergii</i> , <i>Schefflera octophylla</i> , <i>Eurya japonica</i> , <i>Camellia oleifera</i> and <i>Psychotria rubra</i> (CHAU, 1994)." [<i>Schefflera octophylla</i> is commonly used in South China in green belts for fire prevention]

409	2003. Hau, B.C.H. /Corlett, R.T.. Factors Affecting the Early Survival and Growth of Native Tree Seedlings Planted on a Degraded Hillside Grassland in Hong Kong, China. <i>Restoration Ecology</i> . 11(4): 483–488.	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Sapium and Schefflera are common pioneer trees in Hong Kong, with Schefflera exhibiting more shade tolerance than Sapium."
409	2011. Backyard Gardener. Schefflera octophylla. http://www.backyardgardener.com/plantname/pda_172f-2.html	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Light Range: Deep Shade to Part Shade"
410	2000. Hau, B.C.H.. Promoting native tree species in land rehabilitation in Hong Kong, China. Pp. 109-120 in Elliott, S. et al. (eds.). <i>Forest Restoration for Wildlife Conservation</i> . Int. Trop. Timber Org. & The Forest Rest. Research Unit, Chiang Mai Univ.,	[Tolerates a wide range of soil conditions? Unknown] "Soil pH: 5.5 to 6.5; sandy loam to clay loam."
410	2011. Plant this. Schefflera heptaphylla. http://www.plantthis.com.au/plant-information.asp?gardener=22277	[Tolerates a wide range of soil conditions? Unknown] "Soil: enriched soil, mildly acidic to mildly alkaline"
411	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Climbing or smothering growth habit? No] "Trees, to 15 m tall"
412	1997. Chen, Z-S/Hsieh, C-F/Jiang, F-Y/Hsieh, T-H/Sun, I-F. Relations of soil properties to topography and vegetation in a subtropical rain forest in southern Taiwan. <i>Plant Ecology</i> . 132: 229–241.	[Forms dense thickets? Unknown] "Floristically the forest is quite distinct from those on slopes and ridges. Schefflera octophylla forms the major component of the tree stratum, achieving more than 15% of the IV." [Forms a dominant component in some forest types of Taiwan, but unknown if it is able to form dense thickets]
501	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Aquatic? No] "Evergreen broad-leaved forests on mountain slopes" [Terrestrial]
502	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Grass? No] Araliaceae
503	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Nitrogen fixing woody plant? No] Araliaceae
504	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Trees, to 15 m tall, andromonoecious"
601	1997. Hau, C.H.. Tree seed predation on degraded hillsides in Hong Kong. <i>Forestry Ecology and Management</i> . 99: 215–221.	[Evidence of substantial reproductive failure in native habitat? No] "The grassland is dominated by <i>Arundinella</i> sp., <i>Eulalia</i> sp. and <i>Miscanthus</i> sp. The dominant shrubs are <i>Baekkea frutescens</i> and <i>Rhodomyrtus tomentosa</i> . These sites are immediately next to a secondary woodland which is dominated by <i>Microcos paniculata</i> , <i>Acronychia pedunculata</i> , <i>Schefflera octophylla</i> and <i>Machilus chinensis</i> . A few young trees of <i>Schefflera octophylla</i> and <i>Cratoxylum cochinchinense</i> occur in the shrubland. The Kadoorie Agricultural Research Center (KARC) shrubland is on a 25° slope at 200 m and is dominated by <i>Rhodomyrtus tomentosa</i> , <i>Litsea rotundifolia</i> and <i>Rhaphiolepis indica</i> . It is adjacent to a young secondary woodland which is dominated by <i>Schefflera octophylla</i> , <i>Mallotus paniculatus</i> , <i>Evodia lepta</i> and <i>Sapium discolor</i> . Young trees of these species also occur in the shrubland." [No evidence]
601	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	2003. Hau, B.C.H. /Corlett, R.T.. Factors Affecting the Early Survival and Growth of Native Tree Seedlings Planted on a Degraded Hillside Grassland in Hong Kong, China. <i>Restoration Ecology</i> . 11(4): 483–488.	[Produces viable seed? Yes] "Sapium and Schefflera are common pioneer trees in Hong Kong, with Schefflera exhibiting more shade tolerance than Sapium...Overall, the results suggest that all three factors— seasonal drought, belowground competition, and low soil nutrients—can significantly impair seedling growth on a degraded hillside site in Hong Kong but that their relative importance differs among species...Fertilizer and herbicide had large and significant effects on growth of Schefflera, which spontaneously invades such sites in Hong Kong."

- 603 2010. Gostel, M.. Evolutionary relationships in Afro-Malagasy Schefflera (Araliaceae) based on nuclear and plastid markers. MS Thesis. Virginia Commonwealth University, Richmond, VA [Hybridizes naturally? Unknown] "The genus Schefflera is the largest in Araliaceae, with approximately 900 species. Recent studies have shown that Schefflera is polyphyletic and represents no fewer than five distinct clades, each corresponding to a specific geographic region including Asia, continental Africa and Madagascar, Melanesia, the Neotropics, and a small clade distributed throughout several islands in the insular Pacific Ocean. The Afro Malagasy clade contains nearly 50 species distributed throughout tropical, sub Saharan Africa, Madagascar, the Comoros, and the Seychelles islands. Previous studies have suggested that this group is monophyletic, identifying two smaller subclades within Afro Malagasy Schefflera corresponding roughly to informal groups identified as "Meiopanax" and "Sciodaphyllum" on the basis of morphology. Using sequence data from nuclear rDNA spacers and plastid markers derived from 32 of the 48 currently circumscribed species of Afro Malagasy Schefflera, this study tested the monophyly of Afro-Malagasy Schefflera and of each of its two proposed subclades. Trees based on this molecular data were used to examine patterns of morphological evolution and biogeography among species in the clade. Results support the monophyly of Afro-Malagasy Schefflera and both subclades, which correspond closely to "Meiopanax" and "Sciodaphyllum" which are herein referred to as Neocussonia and Astropanax, respectively. Additional interspecific relationships were examined, which provides evidence for hybridization among several species. Schefflera myriantha, the most widely distributed species of Afro Malagasy Schefflera, is paraphyletic with respect to two other species, S. humblotiana and S. monophylla. Many morphological features historically used to distinguish species of Afro-Malagasy Schefflera appear to be evolutionarily labile, with a history of gains and losses (e.g., reduction in leaflet number, which occurs independently in both subclades). Biogeographic analyses suggest an African ancestry for the entire Afro Malagasy Schefflera clade, and for both subclades, with two independent divergence events to Madagascar."
- 604 2011. Pei, N./Luo, Z./Schlessman, M.A./Zhang, D.. Synchronized protandry and hermaphroditism in a tropical secondary forest tree, Schefflera heptaphylla (Araliaceae). Plant Systematics and Evolution. 296: 29–39. [Self-compatible or apomictic? Yes] "While hand-pollinations showed that S. heptaphylla was capable of self-fertilization, our observations of thousands of flowers showed that strong intra- and interfloral protandry severely restricts both autogamous and geitonogamous self-pollination. All flowers were bisexual, thus the sexual system of the populations we studied was hermaphroditism ... Fruit set from hand cross and self-pollinations was significantly higher than natural fruit set, indicating pollen limitation of fruit set. Schefflera heptaphylla has also been reported to be andromonoecious. Both hermaphroditism and andromonoecy are consistent with theoretical predictions for variation in sex allocation among sequentially maturing flowers in protandrous species. Further studies comparing hermaphroditic and andromonoecious populations of S. heptaphylla could elucidate the selective factors affecting sex expression, nectar production, and fruit set in species with numerous flowers displaying both intra- and interfloral dichogamy ... Our pollination experiments showed that S. heptaphylla 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. Taken together, these results indicate a xenogamous (outcrossing) mating system." [Possibly, but likely a rare occurrence]
- 605 2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis [Requires specialist pollinators? No] "Inflorescence a terminal panicle of umbels, densely stellate tomentose, glabrescent; primary axis to 35 cm; secondary axes 25(35) cm, with a terminal umbel of bisexual flowers and several to many lateral umbels of bisexual or more often male flowers, usually also with 1 to several bisexual flowers borne just below apical umbel; pedicels 4-5 mm. Calyx pubescent at first, entire or 5- or 6 toothed. Ovary 5-9(or 10)-carpellate; styles united into a thick column less than 1.5 mm." [Flowers not highly specialized]
- 605 2011. Pei, N./Luo, Z./Schlessman, M.A./Zhang, D.. Synchronized protandry and hermaphroditism in a tropical secondary forest tree, Schefflera heptaphylla (Araliaceae). Plant Systematics and Evolution. 296: 29–39. [Requires specialist pollinators? No] "Floral visitors were primarily flies (Chrysomya sp. and Syrphinae sp.) and wasps (Vespula sp. and Eumenes sp.). Flowers produced nectar during both the male (pollen presentation) and female (stigma receptivity) stages of their development, and the volume of nectar production was higher in the female stage. Nevertheless, flowers received fewer visits in the female stage than they did in the male stage, and natural fruit set was low, especially in first and third order umbellets ... As we predicted, the flowers of Schefflera heptaphylla were visited by a variety of primarily generalized insects, in this case blow flies, hover flies, wasps, house flies, bumblebees, and butterflies. Of these, blow flies and hover flies were by far the most frequent visitors, followed by wasps."
- 606 2011. WRA Specialist. Personal Communication. [Reproduction by vegetative fragmentation? Unknown]

607	2011. WRA Specialist. Personal Communication.	[Minimum generative time (years)? Unknown]
701	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules likely to be dispersed unintentionally? No] "Fruit globose, ca. 5 mm in diam., inconspicuously angled when dry; styles persistent, to ca. 1.5 mm. Fl. Sep-Dec, fr. Dec Feb." [No evidence, or means of external attachment]
702	2011. Backyard Gardener. Schefflera octophylla. http://www.backyardgardener.com/plantname/pda_172f-2.html	[Propagules dispersed intentionally by people? Yes] "decorative berries or fruit, low maintenance" [Available as an ornamental]
702	2011. Plant this. Schefflera heptaphylla. http://www.plantthis.com.au/plant-information.asp?gardener=22277	[Propagules dispersed intentionally by people? Yes] "Uses: indoors, shade tree, informal screen, large planter" [Used ornamentally and in landscapes]
703	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules likely to disperse as a produce contaminant? No] "Fruit globose, ca. 5 mm in diam., inconspicuously angled when dry; styles persistent, to ca. 1.5 mm." [Unlikely]
704	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules adapted to wind dispersal? No] "Fruit globose, ca. 5 mm in diam., inconspicuously angled when dry; styles persistent, to ca. 1.5 mm." [Fleshy-fruited; bird and mammal dispersed]
705	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules water dispersed? No] "Fruit globose, ca. 5 mm in diam., inconspicuously angled when dry; styles persistent, to ca. 1.5 mm." [No obvious adaptations, and unlikely given natural distribution. Not generally found near waterways]
706	1998. Corlett, R.T.. Frugivory and seed dispersal by birds in Hong Kong shrubland. Forktail. 13: 23-27.	[Propagules bird dispersed? Yes] "Table 2. The number of bird species recorded consuming the major bird-fruits in the shrub land at KARC, based on faecal analysis and direct observations." [Schefflera octophylla: Bird Species Number = 22]
706	2002. Hau, C.H./So, K.Y.. Using native tree species to restore degraded hillsides in Hong Kong, China. Pp.179-190 in Sim et al (eds.) Proc. of an International Conference on Bringing Back the Forests: Policies & Practices for Degraded Lands & Forests. FAO	[Propagules bird dispersed? Yes] "S. octophylla and M. breviflora, were found having consistently high survival and growth at all sites planted. Both species are common in secondary forests and S. octophylla is also common as seedlings in shrubland. It is thus considered an early pioneer species. They both bear fleshy fruits in the winter dry season that are dispersed by many bird species. Schefflera octophylla is particularly important in this respect because its fruit will last until the end of the dry season where fruit resources are scarce."
706	2004. Lee, E.. Colonization of exotic plantations by native plants and mammals in Hong Kong. MS Thesis. University of Hong Kong, Hong Kong	[Propagules bird dispersed? Yes] "Table 3.1 List of seed species and number collected from three Lophostemon confertus plantation sites" [Schefflera heptaphylla: Dispersal agent = Bird, bat]
706	2006. Au, Y.Y.A.. Patterns of seed deposition in the upland landscape of Hong Kong. PhD Dissertation. University of Hong Kong, Hong Kong	[Propagules bird dispersed? Yes] "Taxa known to be at least occasionally dispersed by fruit bats made up 2.9% of the seeds, but most of these were from Schefflera heptaphylla, which is predominantly dispersed by birds..."
707	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules dispersed by other animals (externally)? No] "Fruit globose, ca. 5 mm in diam., inconspicuously angled when dry; styles persistent, to ca. 1.5 mm." [No evidence, or means of external attachment]
708	1998. Ko, I.W.P./Corlett, R.T./Xu, R.-J.. Sugar composition of wild fruits in Hong Kong, China. Journal of Tropical Ecology. 14: 381-387.	[Propagules survive passage through the gut? Presumably yes] "Birds are known to consume 29 of the fruit species without detectable sucrose but only four fruit species with detectable sucrose, viz. Acronychia pedunculata, Rhodomyrtus tomentosa, Schefflera octophylla and Wikstroemia indica. The first three of these are also consumed by mammals, although only occasionally in the case of Schefflera."
708	2010. Nakagawa, N.. The Japanese Macaques. Springer, Tokyo	[Propagules survive passage through the gut? Yes] "Table 6.1 Frequency of occurrence and number of seeds in Japanese macaques' feces collected at the western coastal area of Yakushima Islands [Schefflera octophylla: Number of seeds per feces (\pm SD) = 12 \pm 1]
801	2006. Au, Y.Y.A.. Patterns of seed deposition in the upland landscape of Hong Kong. PhD Dissertation. University of Hong Kong, Hong Kong	[Prolific seed production (>1000/m ²)? No] "An earlier seed rain study by Hau (1999) with seed traps raised 0.5 m above the ground collected 1012 seeds m ⁻² year ⁻¹ of 33 woody taxa in shrubland under Schefflera heptaphylla (34% of the seeds were S. heptaphylla),..." [34% of 1012 seeds m ⁻² year ⁻¹ = 344 seeds m ⁻² year]

801	2011. Pei, N./Luo, Z./Schlessman, M.A./Zhang, D.. Synchronized protandry and hermaphroditism in a tropical secondary forest tree, <i>Schefflera heptaphylla</i> (Araliaceae). <i>Plant Systematics and Evolution</i> . 296: 29–39.	[Prolific seed production (>1000/m ²)? No] "Mature trees typically produce 15–30 compound, paniculate inflorescences during a flowering season. A typical compound inflorescence consists of a first order (primary, terminal) umbel, 15.55 ± 0.67 branches (mean ± SE, n = 20) terminating in second order (secondary, lateral) umbels, and 7.45 ± 0.40 third order (tertiary, sublateral) umbels (n = 20) on each branch. Each umbellet is composed of 11.70 ± 0.53 small (ca. 5 mm diameter) flowers (n = 20). Thus, a single compound inflorescence may have 1,337.60 ± 86.40 flowers (n = 20), and trees typically produce thousands of flowers in a single blooming season."
802	2004. Chick, H.-I.. Direct seeding of native species for reforestation on degraded hillsides in Hong Kong. MS Thesis. University of Hong Kong, Hong Kong	[Evidence that a persistent propagule bank is formed (>1 yr)? Possibly No, according to the results of experimental methods using stored seeds] "Regarding to germination capacity, most of the tested species displayed a high germination success in fresh state ... However, improper seed storage would greatly reduce the viability and germination capacity of seeds. Take the case of <i>Schefflera heptaphylla</i> , the complete loss of seed viability within one month after dry storage has led to the failure in the subsequent direct seeding of this species ... Great species variation on seed germination and subsequent seedling establishment could be found in the present experiment. Regardless of site and treatment factors, the maximum cumulative germination rate was the highest in <i>C. neglecta</i> (82%) and lowest in <i>S. heptaphylla</i> and <i>T. gymnanthera</i> (0%) ... On the contrary, <i>L. rotundifolia</i> , <i>S. heptaphylla</i> , <i>R. thyrsoides</i> , <i>G. axillaris</i> , <i>T. gymnanthera</i> and <i>D. calycinum</i> displayed far inferior field germination performances among the tested species. All of them displayed zero germination under particular treatments and site conditions (Appendix I). Even though germination could occur, only a very small proportion of seeds could germinate ... The failure of field germination of <i>L. rotundifolia</i> , <i>S. heptaphylla</i> , <i>D. calycinum</i> , <i>G. axillaris</i> and <i>T. gymnanthera</i> in experiment 1 were consistent with their low seed viability displayed in the nursery."
802	2006. Au, Y.Y.A.. Patterns of seed deposition in the upland landscape of Hong Kong. PhD Dissertation. University of Hong Kong, Hong Kong	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Appendix 4.4 Woody plant taxa found in the TMS montane forest as seeds in the seed rain, on or in soil, in the soil seed bank (3-12 months coverage) and as neighbouring plants growing within 1.5 m radius of each of the 20 seed traps." [<i>S. heptaphylla</i> not found in the seed bank after 3-12 months]
802	2007. Chen, S.Y./Kuo, S.R./Chien, C.T./Baskin, J.M./Baskin, C.C.. Germination, storage behaviour and cryopreservation of seeds of <i>Champereia manillana</i> (Opiliaceae) and <i>Schefflera octophylla</i> (Araliaceae). <i>Seed Science and Technology</i> . 35(1): 154-164.	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown in field setting] "Seeds of <i>S. octophylla</i> survived desiccation to 6-7% and -20°C storage for 24 months without loss of viability. Seeds of this species with a MC ≤ 6.2% also survived in liquid nitrogen, whereas viability was reduced to about 50% of that of seeds originally dried and not stored in liquid nitrogen. Considering the sensitivity of seeds of this species towards lower desiccation (<6% MC) at -20°C and decrease of viability during the 24-month storage, the seeds of this species can probably be categorized as having an intermediate storage behaviour."
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information found on herbicide efficacy or attempts at chemical control of this species
804	2011. WRA Specialist. Personal Communication.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown]
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally? Unknown]