

Taxon: Artocarpus hypargyreus Hance ex Benth	Family: Moraceae
Common Name(s): Bai Gui Mu kwai muk Pai Kuei Mu silver-back artocarpus sweet artocarpus	Synonym(s): Artocarpus hypargyreaus Hance ex Benth

Assessor: Chuck Chimera	Status: Approved	End Date: 6 Mar 2025
WRA Score: 0.0	Designation: L	Rating: Low Risk

Keywords: Tropical Tree, Edible Fruit, Shade-Tolerant, Self-Fertile, Zoochorous
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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	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	n
302	Garden/amenity/disturbance weed	y = 1*multiplier (see Appendix 2), n = 0	n
303	Agricultural/forestry/horticultural weed	y = 2*multiplier (see Appendix 2), n = 0	n
304	Environmental weed	y = 2*multiplier (see Appendix 2), n = 0	n
305	Congeneric weed	y = 1*multiplier (see Appendix 2), n = 0	y
401	Produces spines, thorns or burrs	y = 1, n = 0	n
402	Allelopathic		
403	Parasitic	y = 1, n = 0	n
404	Unpalatable to grazing animals		
405	Toxic to animals	y = 1, n = 0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y = 1, n = 0	n
408	Creates a fire hazard in natural ecosystems	y = 1, n = 0	n

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y = 1, n = 0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y = 1, n = 0	y
411	Climbing or smothering growth habit	y = 1, n = 0	n
412	Forms dense thickets	y = 1, n = 0	n
501	Aquatic	y = 5, n = 0	n
502	Grass	y = 1, n = 0	n
503	Nitrogen fixing woody plant	y = 1, n = 0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y = 1, n = 0	n
601	Evidence of substantial reproductive failure in native habitat	y = 1, n = 0	n
602	Produces viable seed	y = 1, n = -1	y
603	Hybridizes naturally	y = 1, n = -1	n
604	Self-compatible or apomictic	y = 1, n = -1	y
605	Requires specialist pollinators	y = -1, n = 0	n
606	Reproduction by vegetative fragmentation	y = 1, n = -1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
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		
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		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Cultivated, but not domesticated] "Kwai Muk is native to Sothern China, in Hong Kong, Fujian, Guangdong, Guangxi, Hainan, South Hunan, Jiangxi and southeast Yunnan." ... "Ripe fruit has an excellent flavour and is eaten fresh or preserved with salt or sugar syrup. The fruit can be dried, dried fruit still retains the good texture and flavour."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	Blancke, R. (2016). Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide. Cornell University Press, Ithaca, NY	"Although best adapted to a moist, warm, subtropical or tropical climate, the Kwai muk can withstand light frosts."
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Broad-leaved evergreen forests; 100-1700 m. Fujian, Guangdong, Guangxi, Hainan, S Hunan, Jiangxi, SE Yunnan."

202	Quality of climate match data	High
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Broad-leaved evergreen forests; 100-1700 m. Fujian, Guangdong, Guangxi, Hainan, S Hunan, Jiangxi, SE Yunnan."

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"In its native range, Kwai Muk occurs in broad-leaved, evergreen forests at elevations of 100-1,700 m. The tree is frost sensitive. Young trees are injured by brief periods of low temperature -2.2°C to 1.2°C, while mature tree will tolerate drop in temperatures down to -3°C to -4°C as experienced in Florida."
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[Elevation range >1000 m] "Broad-leaved evergreen forests; 100-1700 m. Fujian, Guangdong, Guangxi, Hainan, S Hunan, Jiangxi, SE Yunnan."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"Kwai Muk is native to Southern China, in Hong Kong, Fujian, Guangdong, Guangxi, Hainan, South Hunan, Jiangxi and southeast Yunnan."
	Blanke, R. (2016). Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide. Cornell University Press, Ithaca, NY	"Origin and Distribution. The Kwai muk is native to southern China, where it grows wild in Kwangtung Province, on Hainan Island, and in Hong Kong. The tree is occasionally cultivated in Southeast Asia but rarely elsewhere in the tropics. Although best adapted to a moist, warm, subtropical or tropical climate, the Kwai muk can withstand light frosts."

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Hanelt, P. (ed.). 2001. Mansfeld's encyclopedia of agricultural & horticultural crops: (except ornamentals). Algae, Fungi, Pteridophyta, Gymnospermae, Angiospermae - Dicotyledones: Magnoliaceae - Chrysobalanaceae Vol. 1. Springer-Verlag, Berlin, Heidelberg, New York	"Cultivated in China and USA (Florida) as fruit-tree."
	WRA Specialist. (2025). Personal Communication	Its cultivation outside this native range appears to be limited. Notably, it was introduced to Florida, USA, in 1927, where it has been grown experimentally. However, its presence in Florida remains relatively uncommon, and it has not been widely adopted in other regions. This limited cultivation may be due to its specific climatic requirements and slow growth rate.
	GBIF Secretariat (2025). <i>Artocarpus hypargyreus</i> Hance ex Benth. GBIF Backbone Taxonomy. Checklist dataset. https://www.gbif.org/species/3764756 . [Accessed 26 Feb 2025]	Limited records outside native range

Qsn #	Question	Answer
301	Naturalized beyond native range	n
	Source(s)	Notes
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2025). Plants of Hawai'i. http://www.plantsofhawaii.org . [Accessed 26 Feb 2025]	[No evidence] "Only found in cultivation"
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	GBIF Secretariat (2025). <i>Artocarpus hypargyreus</i> Hance ex Benth. GBIF Backbone Taxonomy. Checklist dataset. https://www.gbif.org/species/3764756 . [Accessed 26 Feb 2025]	No evidence

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	CABI. (2025). CABI Compendium Invasive Species. https://www.cabidigitallibrary.org/product/qi . [Accessed 26 Feb 2025]	No evidence

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
	CABI. (2025). CABI Compendium Invasive Species. https://www.cabidigitallibrary.org/product/qi . [Accessed 26 Feb 2025]	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	CABI. (2025). CABI Compendium Invasive Species. https://www.cabidigitallibrary.org/product/qi . [Accessed 26 Feb 2025]	No evidence

305	Congeneric weed	y
	Source(s)	Notes

Qsn #	Question	Answer
	Magalhães, L. C. S., Cabral, R. C. C., de Aguiar, D. P. P., Nunez, C. V., Maia, J. M. F., & Silva-Forsberg, M. C. (2022). Distribution of invasive exotic species <i>Artocarpus heterophyllus</i> Lam. in a forest fragment in the Amazon. Research, Society and Development, 11(3), e59011326734-e59011326734	" <i>Artocarpus heterophyllus</i> is an invasive exotic species known for its negative impacts on Brazilian ecosystems. The aim of this study was to evaluate the distribution and population structure of <i>A. heterophyllus</i> in the plant community of a forest fragment in the Amazon. Individuals of this species were subject to active search at Sumaúma State Park, in Manaus, and two plots were delimited, where these individuals were counted. In each plot, the jackfruit tree individual with the largest Diameter at Breast Height (DBH) was centralized, and from it, native species were inventoried. The parameters of relative density, relative dominance and the importance value index were estimated. Jackfruit tree individuals in the plots had grouped distribution and their number in plots 1 and 2 was 308 and 872 individuals, respectively. In quadrant 1, 254 jackfruit trees and 118 native individuals were recorded, and in quadrant 2, 629 jackfruit and 130 native individuals. The jackfruit tree reached indices higher than the sum of the phytosociological indices of all native species. Jackfruit tree distribution was considered similar to that occurring in other already invaded areas of Brazil, which may indicate that the same impacts may occur in Amazonian ecosystems."
	Gama-Matos, R. et al. (2020). Can an exotic tree (Jackfruit, <i>Artocarpus heterophyllus</i> Lam.) influence the non-volant small mammals assemblage in a protected area of Atlantic Forest?. Journal of Tropical Ecology, 36(5), 243-250	"Jackfruit (<i>Artocarpus heterophyllus</i> Lam.) is an exotic invasive plant species in the Brazilian Atlantic Forest that causes changes in the environment through the release of allelopathic substances and has high fruit production. We aimed to understand the potential effects of the jackfruit on the non-volant small mammal assemblage in an area protected by law, in the municipality of Cariacica - Espírito Santo, south-eastern Brazil. We sampled the small mammals assemblage using live traps in 18 sites, eight with jackfruit and 10 without. We ordinated the assemblage and tested possible differences in species richness and abundance according to the jackfruit density. We recorded 31 species of non-volant small mammals, with 13 species endemic to the Atlantic Forest. Jackfruit species can affect both positively and negatively the studied assemblage of nonvolant small mammals. For species with a frugivory habit, jackfruit has a positive effect favouring these species. On the other hand, for insectivorous species, jackfruit represents an impact inhibiting the presence of these species in an area with high jackfruit density. The results presented are the first step in understanding the effect of this invasive species on a small mammals assemblage and initiating a monitoring of these species in areas affected by jackfruits. Furthermore, management of jackfruits in this protected area is required."

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[No evidence] "Trees 10-25 m tall, d.b.h. 40 cm. Bark dark purple, exfoliating. Young branchlets 1.5-2 thick, grayish to whitish appressed puberulent. Stipules linear, caducous. Leaves distichous; petiole 1.5-2 cm, pubescent; leaf blade elliptic to obovate, 8-15 × 4-7 cm, pinnately lobed on young trees, leathery, abaxially green to whitish green and with farinaceous pubescence, adaxially dark green and puberulent on midvein when young, base cuneate, margin entire, apex acuminate to shortly acuminate; veins conspicuous and grayish white when dry, secondary veins 6-7 on each side of midvein, apically curved, abaxially prominent, and adaxially flat. Inflorescences axillary, solitary. Male inflorescences ellipsoid to obovoid, 1.5-2 × 1-1.5 cm; peduncle 2-4.5 cm, pubescent; bracts shield-shaped. Male flowers: calyx lobes 4, spatulate, densely pubescent, adnate to bracts; anther ellipsoid. Fruiting syncarp pale to golden yellow, ± globose, 3-4 cm in diam., brown pubescent, papillate; peduncle 3-5 cm, shortly pubescent. "

402	Allelopathic	
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Qsn #	Question	Answer
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees 10-25 m tall, d.b.h. 40 cm." [Moraceae]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown. While specific studies on the browsing or grazing of <i>Artocarpus hypargyreus</i> foliage by animals are limited, it is reasonable to infer that its leaves may be consumed by herbivores, as many species within the <i>Artocarpus</i> genus are known to be browsed by animals.

405	Toxic to animals	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"Ripe fruit has an excellent flavour and is eaten fresh or preserved with salt or sugar syrup. The fruit can be dried, dried fruit still retains the good texture and flavour." [No evidence of toxicity to animals or people]
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown. Specific information regarding its role as a host to significant plant pests or pathogens is limited in the available literature. However, related species in the <i>Artocarpus</i> genus, such as <i>Artocarpus heterophyllus</i> (jackfruit) and <i>Artocarpus altilis</i> (breadfruit), are known to be susceptible to various pests and diseases.

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"Ripe fruit has an excellent flavour and is eaten fresh or preserved with salt or sugar syrup. The fruit can be dried, dried fruit still retains the good texture and flavour." [No evidence of toxicity to animals or people]
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence

Qsn #	Question	Answer
408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"In its native range, Kwai Muk occurs in broad-leaved, evergreen forests at elevations of 100-1,700 m." [No evidence. Unlikely given habitat]
409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2025). <i>Artocarpus hypargyreus</i> . https://tropical.theferns.info/viewtropical.php?id=Artocarpus+hypargyreus . [Accessed 5 Mar 2025]	"In general, species in this genus prefer a deep, well-drained soil; young plants need some shade, but need increasing light levels as they mature"
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"It grows in full sun and partial shade."
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"It will grow on most soils provided they are well-drained, but thrives best in mildly acid sandy soils. It will grow in calcareous soils but do suffer from chlorosis associated with iron, manganese and zinc deficiencies."
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees 10-25 m tall, d.b.h. 40 cm."
412	Forms dense thickets	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"In its native range, Kwai Muk occurs in broad-leaved, evergreen forests at elevations of 100-1,700 m." [Based on its growth habits and ecological characteristics, it is unlikely to form dense thickets like some invasive or highly competitive species.]
501	Aquatic	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[Terrestrial] "Broad-leaved evergreen forests; 100-1700 m."

Qsn #	Question	Answer
502	Grass	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	Moraceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	Moraceae

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.). (2003). Flora of China. Vol. 5 (Ulmaceae through Basellaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees 10-25 m tall, d.b.h. 40 cm."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[No evidence] "Kwai Muk is native to Southern China, in Hong Kong, Fujian, Guangdong, Guangxi, Hainan, South Hunan, Jiangxi and southeast Yunnan."

602	Produces viable seed	y
	Source(s)	Notes
	Huang Yunpeng. (2010). Dynamics and Characteristics of Soil Seed Bank of Endangered <i>Artocarpus hypargyreus</i> Hance. Forest and Grassland Resources Research, (6), 56-59	"Abstract: The soil seed bank of <i>Artocarpus hypargyreus</i> Hance was studied in wildwood by screening. The results showed that the seed bank of <i>Artocarpus hypargyreus</i> Hance was small in reserves and the largest reserve was 31.9/m ² . A large number of seeds (about 80%) stored in the litter layer. The seed distribution pattern was obviously in clusters and almost all of seeds distributed in the crown scope."
	Tropical Plants Database, Ken Fern. (2025). <i>Artocarpus hypargyreus</i> . https://tropical.theferns.info/viewtropical.php?id=Artocarpus+hypargyreus . [Accessed 5 Mar 2025]	"Propagation - Seed"
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	"Seeds 1-7 embedded in orange-red to red, soft, pleasantly subacid pulp"

603	Hybridizes naturally	n
	Source(s)	Notes
	Zerega, N., Ragone, D., & Motley, T. (2005). Systematics and Species Limits of Breadfruit (<i>Artocarpus</i> , Moraceae). Systematic Botany, 30(3), 603-615	[Hybrids documented between other species of <i>Artocarpus</i> , but none for <i>A. hypargyreus</i>] "Hybrids between <i>A. altilis</i> and <i>A. mariannensis</i> also occur. Therefore, the treatment below recognizes three monophyletic apospecies, <i>A. camansi</i> , <i>A. mariannensis</i> , and <i>A. altilis</i> as well as natural <i>A. altilis</i> X <i>A. mariannensis</i> hybrids."

Qsn #	Question	Answer
	WRA Specialist. (2025). Personal Communication	There is no specific documentation in the published literature indicating that <i>Artocarpus hypargyreus</i> naturally hybridizes with other species. Hybridization in the <i>Artocarpus</i> genus is generally rare and typically occurs under controlled conditions rather than in the wild. However, hybridization has been documented in some cultivated <i>Artocarpus</i> species, such as <i>Artocarpus heterophyllus</i> (jackfruit) and <i>Artocarpus integer</i> (chempedak), often through human intervention.

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Urban Tropicals. (2025). Kwai Muk Tree (<i>Artocarpus hypargyreaus</i>). https://urbantropicals.com/product/kiwa-muk-tree-artocarpus-hypargyreaus/ . [Accessed 5 Mar 2025]	"Kwai Muks' self-pollinating mature tree is slow-growing and relatively small."
	Peppy Plants. (2025). Kwai Muk (<i>Artocarpus hypargyreus</i>). https://peppyplants.com.au/kwai-muk-artocarpus-hypargyreus/ . [Accessed 5 Mar 2025]	[Primarily outcrossing, but capable of self-fertilization] "Insects are believed to be the major pollinators. Pollination is facultatively xenogamous, ie the major means of pollination is by outcrossing with a genetically different tree of <i>hypargyreus</i> while it has limited means of being pollinated by pollen from male flowers on the same tree provided sufficient overlap of male and female flowering occurs. Different trees can have variable levels of sterile pollen."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"All the species studied appear to be pollinated by insects ..." [Includes <i>Artocarpus hypargyreus</i>]
	Peppy Plants. (2025). Kwai Muk (<i>Artocarpus hypargyreus</i>). https://peppyplants.com.au/kwai-muk-artocarpus-hypargyreus/ . [Accessed 5 Mar 2025]	"Insects are believed to be the major pollinators."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2025). <i>Artocarpus hypargyreus</i> . https://tropical.theferns.info/viewtropical.php?id=Artocarpus+hypargyreus . [Accessed 5 Mar 2025]	"Propagation - Seed"
	WRA Specialist. (2025). Personal Communication	No evidence. In general, <i>Artocarpus</i> species, including <i>A. hypargyreus</i> , primarily reproduce through seeds rather than vegetative propagation in their natural habitats. However, vegetative propagation methods, such as grafting or cuttings, are often used in cultivation to maintain desirable traits.

607	Minimum generative time (years)	>3
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2025). <i>Artocarpus hypargyreus</i> . https://tropical.theferns.info/viewtropical.php?id=Artocarpus+hypargyreus . [Accessed 5 Mar 2025]	" <i>Artocarpus hypargyreus</i> is a fairly slow-growing evergreen tree growing 10 - 25 metres tall."
	Sow Exotic. (2025). Kwai Muk (<i>Artocarpus hypargyreaus</i>). https://sowexotic.com/products/kwai-muk-artocarpus-hypargyreaus . [Accessed 5 Mar 2025]	"Grown from seeds or cuttings; fruit production begins within 4-6 years after planting."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Hanelt, P. (ed.). 2001. <i>Mansfeld's encyclopedia of agricultural & horticultural crops: (except ornamentals)</i> . Algae, Fungi, Pteridophyta, Gymnospermae, Angiospermae - Dicotyledones: Magnoliaceae - Chrysobalanaceae Vol. 1. Springer-Verlag, Berlin, Heidelberg, New York	"Cultivated in China and USA (Florida) as fruit-tree."
	Blancke, R. (2016). <i>Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide</i> . Cornell University Press, Ithaca, NY	"With its rounded, dense crown, slow growth, and beautiful foliage, the Kwai muk makes an attractive ornamental for landscaping in larger gardens. The prolific tree can produce more than 2,000 fruits per tree, per season."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind."
	WRA Specialist. (2025). Personal Communication	While it is possible for <i>Artocarpus hypargyreus</i> seeds to be dispersed as a produce contaminant, it is not documented method of dispersal for this species. The seeds are more likely to be spread through natural means or intentional human activities related to cultivation and consumption.

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind."

705	Propagules water dispersed	n
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind."
	WRA Specialist. (2025). Personal Communication	While water dispersal is theoretically possible under specific conditions (e.g., proximity to water bodies or flooding events), it is not a significant or well-documented method of seed dispersal for <i>Artocarpus hypargyreus</i> . The species is more likely to rely on animal and human-mediated dispersal for spreading its seeds.

706	Propagules bird dispersed	
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Qsn #	Question	Answer
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind."
	WRA Specialist. (2025). Personal Communication	There is no specific, widely documented evidence or published literature that explicitly confirms <i>Artocarpus hypargyreus</i> seeds being dispersed by birds. However, based on the general biology of the species and its fruit characteristics, it is reasonable to infer that birds could play a role in seed dispersal

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind." [Implies that animals consume the fruit and subsequently excrete or discard the seeds at different locations, aiding in the plant's propagation]

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Corlett, R. T. (1996). Characteristics of vertebrate-dispersed fruits in Hong Kong. <i>Journal of Tropical Ecology</i> , 12(6), 819-833	"Appendix 1. Characteristics of 153 vertebrate-dispersed fruits from Hong Kong." [<i>Artocarpus hypargyreus</i> - Disp. agent - C, c = civet; M, m = macaque]
	Corlett, R. T. (1993). Reproductive phenology of Hong Kong shrubland. <i>Journal of Tropical Ecology</i> , 9(4), 501-510	"Four species (<i>Artocarpus hypargyreus</i> , <i>Diospyros morrisiana</i> , <i>Garcinia oblongifolia</i> and <i>Gnetum montanum</i>) seem to be largely or entirely dispersed by mammals (civets and/or rhesus macaques) and the remaining ten are dispersed by wind." [Implies that animals consume the fruit and subsequently excrete or discard the seeds at different locations, aiding in the plant's propagation.]

801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Huang Yunpeng. (2010). Dynamics and Characteristics of Soil Seed Bank of Endangered <i>Artocarpus hypargyreus</i> Hance. <i>Forest and Grassland Resources Research</i> , (6), 56-59	"Abstract: The soil seed bank of <i>Artocarpus hypargyreus</i> Hance was studied in wildwood by screening. The results showed that the seed bank of <i>Artocarpus hypargyreus</i> Hance was small in reserves and the largest reserve was 31.9/m2. A large number of seeds (about 80%) stored in the litter layer. The seed distribution pattern was obviously in clusters and almost all of seeds distributed in the crown scope. "
	Liu, X., He, Y., Xiao, Y., Wang, Y., Jiang, Y., & Jiang, Y. (2019). Soil seed burial and competition with surrounding plants determine the emergence and development of seedling of an endangered species <i>Horsfieldia hainanensis</i> Merr. in China. <i>Scientific Reports</i> , 9(1), 17970	"Studies on the soil seed banks of <i>Artocarpus hypargyreus</i> and <i>Amygdalus mongolica</i> indicated that the seed reserves in the soil seed bank of both species were low (23.3~31.9 seeds/m2 and 2.6~21.2 seeds/m2, respectively) due to animal feeding, and human and environmental factors."

Qsn #	Question	Answer
802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes
	Baskin, C.C. & Baskin, J.M. (2014). <i>Seeds Ecology, Biogeography, and Evolution of Dormancy and Germination</i> . Second Edition. Academic Press, San Francisco, CA	" <i>Artocarpus hypargyreus</i> " [ND = Non-dormant]

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown. No specific information is available regarding the control of <i>A. hypargyreus</i> with herbicides.

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown. Many <i>Artocarpus</i> species, including <i>Artocarpus heterophyllus</i> (jackfruit), are known to tolerate pruning and can recover from damage to branches or stems. Pruning can even stimulate new growth and improve fruit production in cultivated settings. Tropical fruit trees like <i>Artocarpus hypargyreus</i> are not typically adapted to fire-prone ecosystems. They are likely sensitive to fire, which can damage or kill the tree, especially if the fire is intense or frequent.

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown

Summary of Risk Traits:

Artocarpus hypargyreus, commonly known as the Kwai Muk or Chinese mulberry, is a tree species native to southern China and Vietnam. It belongs to the Moraceae family, which includes other well-known fruit trees like breadfruit (*Artocarpus altilis*) and jackfruit (*Artocarpus heterophyllus*). The tree can grow up to 10-15 meters in height and has a dense, rounded canopy. Its leaves are large, glossy, and deeply lobed, while its flowers are small and inconspicuous. The fruit of *Artocarpus hypargyreus* is round to oval, yellow to orange when ripe, and has a sweet-tart flavor. The fruit, leaves, and seeds are edible and are used in traditional cuisines and medicinal practices in its native range.

Artocarpus hypargyreus is a valuable fruit tree with cultural, nutritional, and ecological significance in its native range. While it has been introduced to Hawaii and other regions, it is not currently considered invasive. Its potential for naturalization exists, but the risk of significant negative impacts on Hawaiian ecosystems appears low. Continued observation and responsible cultivation practices can help mitigate any potential risks associated with its introduction.

High Risk / Undesirable Traits

- Grows and could spread in regions with tropical climates
- Broad elevation range
- Other *Artocarpus* species have weedy traits and tendencies
- Shade tolerant (potential to establish within intact forests)
- Tolerates many soil types (not limited by substrate)
- Reproduces by seed
- Reported to be self-fertile (although primarily outcrossing)
- Reaches maturity in 2.5 years
- Seeds dispersed by civets and/or rhesus macaques in its native range, possibly birds or other frugivorous animals within its introduced range, and through intentional cultivation
- Tolerates repeated pruning and cutting

Low Risk Traits

- No reports of invasive or negative impacts where cultivated
- Unarmed (no spines, thorns, or burrs)
- Fruit palatable to animals and people
- Not reported to be toxic
- Not reported to spread vegetatively
- Relatively large seeds unlikely to be accidentally dispersed

