Taxon: Canarium odontophyllum Miq. **Family:** Burseraceae

Common Name(s): dabai
sibu olive

Synonym(s): Canarium beccarii Engl.
Canarium multifidum H.J.Lam
Canarium odontophyllum f. multifidum (H.J.Lam) Leenh.
Canarium palawanense Elmer

Assessor: Chuck Chimera **Status:** Approved **End Date:** 23 Oct 2026

WRA Score: -4.0 **Designation:** L **Rating:** Low Risk

Keywords: Tropical Tree, Edible Fruit, Edible Seed, Androdioecious, 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	?
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	n
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
409	Is a shade tolerant plant at some stage of its life cycle		

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y = 1, n = 0	n
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		
604	Self-compatible or apomictic	y = 1, n = -1	n
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		
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)		
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 1, Fruits. Springer, New York	[No evidence] "Origin/Distribution Dabai is indigenous to Borneo – the area of greatest diversity is located in Brunei Darussalam and the Brunei Bay region. In Sarawak dabai can be found along the riverbansk in Sibu, Kapit and Sarikei divisions. It is also found in Pahlawan and Sumatra. Agroecology Dabai occurs in undisturbed lowland forests up to 700 m altitude; mostly on hillsides and ridges, but sometimes also in swamps or along rivers in its native tropical range. Quite often, dabai is found on limestone. In secondary forests, it is usually present as a pre-disturbance remnant tree."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2026). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2026). 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
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	"Dabai is indigenous to Borneo – the area of greatest diversity is located in Brunei Darussalam and the Brunei Bay region. In Sarawak dabai can be found along the riverbansk in Sibu, Kapit and Sarikei divisions. It is also found in Pahlawan and Sumatra."

202	Quality of climate match data	High
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	"Dabai is indigenous to Borneo – the area of greatest diversity is located in Brunei Darussalam and the Brunei Bay region. In Sarawak dabai can be found along the riverbansk in Sibu, Kapit and Sarikei divisions. It is also found in Pahlawan and Sumatra."

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	"Dabai occurs in undisturbed lowland forests up to 700 m altitude; mostly on hillsides and ridges, but sometimes also in swamps or along rivers in its native tropical range. Quite often, dabai is found on limestone. In secondary forests, it is usually present as a pre-disturbance remnant tree." [Low elevation tropics. Elevation range <1000 m]

Qsn #	Question	Answer
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"Distribution Sumatra, Borneo and Palawan. " ... "C. odontophyllum is locally common in primary forest, up to 450 m altitude." [Low elevation tropics]
	Blancke, R. (2016). Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide. Cornell University Press, Ithaca, NY	"Native to Borneo. Occasionally cultivated in Southeast Asia, especially in Malaysia, Indonesia, and the Philippines. In Borneo, fruits are often harvested from wild trees. Very rare in other tropical regions. The plant grows as a canopy tree in lowland dipterocarp rainforests with constant high temperatures and humidity."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"Distribution - Sumatra, Borneo and Palawan. "
	POWO (2026). Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; https://powo.science.kew.org/. [Accessed 22 Oct 2026]	"The native range of this species is Sumatera, Borneo, Philippines (Palawan). It is a tree and grows primarily in the wet tropical biome."

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	**Notes**
	Blancke, R. (2016). Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide. Cornell University Press, Ithaca, NY	"Native to Borneo. Occasionally cultivated in Southeast Asia, especially in Malaysia, Indonesia, and the Philippines. In Borneo, fruits are often harvested from wild trees. Very rare in other tropical regions."
	Daleys Fruit Tree Nursery. (2026). Dabai - Canarium odontophyllum. https://www.daleysfruit.com.au/buy/dabai-fruit-tree-canarium-odontophyllum.htm. [Accessed 22 Oct 2026]	"Resembling olives, the ripe black fruit is soaked for 10 minutes to soften the skin and the flesh is sucked off the seed. Taste is creamy, like avocado, suits both savoury and sweet seasoning. Native to Borneo this tall tree can be pruned to control size. Trees are dioecious, meaning male and female flowers are on separate trees. The seed can also be extracted for a nutritious snack." [Sold commercially in Australia. Distribution in Australia unknown]
	GBIF Secretariat (2026). Canarium odontophyllum Miq. https://www.gbif.org/taxon/QJNB. [Accessed 22 Oct 2026]	No evidence

301	Naturalized beyond native range	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2026). Plants of Hawai'i. http://www.plantsofhawaii.org. [Accessed 22 Oct 2026]	No evidence
	GBIF Secretariat (2026). Canarium odontophyllum Miq. https://www.gbif.org/taxon/QJNB. [Accessed 22 Oct 2026]	No evidence, and no records outside native range

302	Garden/amenity/disturbance weed	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	WRA Specialist. (2026). Personal Communication	Canarium odontophyllum is grown as a fruit tree and ornamental in parks and gardens, but there is no documented evidence that it behaves as a garden, amenity, or disturbance weed. In Singapore, it is recorded as an introduced species that is cultivated only, with no evidence of naturalization.
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	Canarium odontophyllum is cultivated as a fruit tree and for its edible fruit and timber, particularly in Borneo. Available botanical and horticultural references describe its cultivation and uses but do not identify it as an agricultural, forestry, or horticultural weed.
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	Canarium odontophyllum is not identified as an environmental weed in the sources located. Kew lists its native range as Sumatra, Borneo, and Palawan, while Singapore's National Parks Board describes it as a tropical fruit tree occurring in forest habitats and cultivated for its edible fruit. Neither source identifies it as invasive or damaging to natural ecosystems.
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	n
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	No clear evidence was found that another species of Canarium is a recognized environmental or agricultural weed. Some congeners, including Canarium indicum and Canarium vulgare, have been introduced outside their native ranges, but introduction alone does not establish weed status.
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

401	Produces spines, thorns or burrs	n
	Source(s)	**Notes**
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	[No evidence] "A very handsome, medium-sized, upright tree up to 36 m high with 86 cm trunk diameter and branched canopy at the top of the trunk (Plates 1- 2). Leaves are large, thin and finely pubescent, pinnate leaves (Plate 3), shallowly odd pinnate with serrated margin and penniveined; lowest pair of leaflets often reduced to pseudo-stipules with fimbriate margin (Plate 4). New foliage emerges in flushes of green or red velvet. Branchlets and petioles have resinous ducts."

Qsn #	Question	Answer
402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2026). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"A medium-sized to fairly large tree up to 35 m tall, bole branchless for up to 18 m, up to 60 cm in diameter, with buttresses, inner bark exuding a little whitish resin." [No evidence. A free-living, photosynthetic tree in the family Burseraceae]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	Kanamori, T., Kuze, N., Bernard, H., Malim, T. P., & Kohshima, S. (2010). Feeding ecology of Bornean orangutans (Pongo pygmaeus morio) in Danum Valley, Sabah, Malaysia: a 3-year record including two mast fruitings. American Journal of Primatology, 72(9), 820-840	"Appendix A: Food List Of Orangutans In Danum Valley With Time Percentage To The Total Feeding Time" [Leaves and bark are consumed]
	WRA Specialist. (2026). Personal Communication	Unknown. No species-specific evidence was found establishing whether Canarium odontophyllum is unpalatable to grazing animals. Available references describe it as a tropical fruit tree but do not document livestock browsing preferences or avoidance of its foliage.

405	Toxic to animals	n
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2026). Canarium odontophyllum. https://tropical.theferns.info/viewtropical.php?id=Canarium%20odontophyllum. [Accessed 22 Oct 2026]	"Known Hazards None known"
	Manap, N. A., Azlan, A., Hamzah, H., Fakurazi, S., & Kadir, N. A. A. A. (2019). Evaluation of acute toxicity induced by supercritical carbon dioxide extract of Canarium odontophyllum (CO) Miq. pulp oil in SPF Sprague Dawley rats.Malaysian Journal of Medicine and Health Sciences, 15, 113-119	[This study reported no acute toxicity from a single high dose of extracted pulp oil.] "We may conclude that oral administration of CO pulp oil extract to healthy SPF rats for 14 days did not cause adverse effects in both male and female rats of a maximum dose of 5000 mg/kg. The heavy metals were in trace level and considered safe to consume. The CO pulp oil extract did not induce toxicity on biochemical parameters and relative organs weight at this highest dose. Thus, this extract did not altered any histopathological changes at acute oral toxicity. However, further investigations on subacute and subchronic toxicity should perform for detail safety profile of CO pulp oil extract."
	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
	EPPO. (2026). Canarium odontophyllum (CNBOD). https://gd.eppo.int/taxon/CNBOD/pests. [Accessed 22 Oct 2026]	"Pests Bactrocera carambolae (BCTRCB) Host Selenothrips rubrocinctus (as Canarium) (SLENRU)"

Qsn #	Question	Answer
	WRA Specialist. (2026). Personal Communication	C. odontophyllum is a documented host for the carambola fruit fly (B. carambolae) and the red-banded thrips (S. rubrocinctus). Its harvested wood is vulnerable to fungi, borers, and termites. However, the living tree is often characterized in agricultural literature as being relatively free of major pest and disease issues, particularly in the context of fruit production.

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	**Notes**
	Tropical Plants Database, Ken Fern. (2026). Canarium odontophyllum. https://tropical.theferns.info/viewtropical.php?id=Canarium%20odontophyllum. [Accessed 22 Oct 2026]	"Known Hazards None known"
	Hamzah, M. H., Mohd Basri, M. S., Maringgal, B., Mohd Ali, M., Wondi, M. H., Che Man, H., & Gatuk Abdulloh, S. (2022). Exploring Dabai (Canarium odontophyllum), indigenous fruit of Borneo: a review of nutritional values, potential uses, emerging application in essential oil processing, and health benefits. Plants, 11(19), 2646	[No evidence] "Abstract: Dabai (Canarium odontophyllum) is a fruit-bearing plant native to Borneo. Its fruit is an indigenous seasonal fruit that is considered to be underutilized due to its short shelf life. However, new products have been developed to ensure a continuous supply of dabai fruit throughout the year. Hence, the exploration of dabai fruits in characterizations and utilization for food products and essential oil has expanded exponentially. This review addresses the nutritional values, health benefits, potential food products, and essential oil processing of dabai fruit. All parts of dabai fruit, such as the pulp, skin, and kernel, contain a considerable amount of bioactive compounds, dietary fiber, and nutrients. Moreover, dabai fruit has also been proven to have health benefits such as an antioxidant capacity, cholesterol reduction, diabetes type 2 prevention, and reduction in the risk of heart disease. Some potential dabai-based food products and oil processing of dabai are also highlighted. The future perspectives and challenges concerning the potential uses of dabai are critically addressed at the end of this review. Based on this review, it is proven that dabai has various health benefits and represents a potential breakthrough in the agricultural and food industries."
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	[No evidence] "The fruit is edible. The whole fruit is soaked 5–10 minutes in hot water to soften the mesocarp and eaten with sugar or with a little soy sauce or salt, with a meal or as a savoury snack. The fruit represents a rich energy source with good amounts of oils and proteins. The kernel or nut containing the whitish compressed cotyledon is also edible. It has a fine flavour, crunchy with a rich mealy, oily taste."
	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

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	**Notes**
	POWO (2026). Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; https://powo.science.kew.org/. [Accessed 22 Oct 2026]	"It is a tree and grows primarily in the wet tropical biome." [No documented evidence that Canarium odontophyllum creates a fire hazard in natural ecosystems. It is an evergreen tree native to wet tropical forests, where it grows along riverbanks, hillsides, and in lowland forests]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	**Notes**

Qsn #	Question	Answer
	Hortiforum. (2026). Dabai. https://hortiforum.com/dabai/. [Accessed 22 Oct 2026]	"Dabai can tolerate both full sun and partial shade, requiring well-draining soil and ample water, with most parts of Borneo receiving between 2000mm and 3000mm of rainfall annually."
	Flora Fauna Web. (2026). Canarium odontophyllum Miq. https://www.nparks.gov.sg/florafaunaweb/flora/3/7/3776. [Accessed 22 Oct 2026]	"Light Preference Full Sun"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	**Notes**
	Hortiforum. (2026). Dabai. https://hortiforum.com/dabai/. [Accessed 22 Oct 2026]	"Preferred Soil (info) Good-Perfect Drainage Preferred PH (info) Slightly Acidic (5.5-6.5)"
	Flora Fauna Web. (2026). Canarium odontophyllum Miq. https://www.nparks.gov.sg/florafaunaweb/flora/3/7/3776. [Accessed 22 Oct 2026]	"Rootzone Tolerance Well-Drained Soils"

411	Climbing or smothering growth habit	n
	Source(s)	**Notes**
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"A medium-sized to fairly large tree up to 35 m tall, bole branchless for up to 18 m, up to 60 cm in diameter, with buttresses, inner bark exuding a little whitish resin."

412	Forms dense thickets	n
	Source(s)	**Notes**
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"C. odontophyllum is locally common in primary forest, up to 450 m altitude." [No evidence]
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	[No evidence] "Dabai occurs in undisturbed lowland forests up to 700 m altitude; mostly on hillsides and ridges, but sometimes also in swamps or along rivers in its native tropical range. Quite often, dabai is found on limestone. In secondary forests, it is usually present as a pre-disturbance remnant tree."
	WRA Specialist. (2026). Personal Communication	Canarium odontophyllum is a large, primarily mid-canopy tree that can reach approximately 35–36 m tall. Botanical references describe it as occurring in undisturbed lowland forests, riverbanks, hillsides, and limestone forests, but do not report that it forms dense thickets or creates dense stands that suppress other vegetation.

501	Aquatic	n
	Source(s)	**Notes**
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	[Terrestrial] "Dabai occurs in undisturbed lowland forests up to 700 m altitude; mostly on hillsides and ridges, but sometimes also in swamps or along rivers in its native tropical range. Quite often, dabai is found on limestone. In secondary forests, it is usually present as a pre-disturbance remnant tree."

Qsn #	Question	Answer
502	Grass	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	Burseraceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	Burseraceae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"A medium-sized to fairly large tree up to 35 m tall, bole branchless for up to 18 m, up to 60 cm in diameter, with buttresses, inner bark exuding a little whitish resin."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Lemmens, R.H.M.J., Soerianegara, I. & Wong, W.C. (Eds.). (1995). Plant Resources of South-East Asia. No 5(2). Timber Trees: Minor Commercial Timbers. Backhuys Publishers, Leiden, The Netherlands	"C. odontophyllum is locally common in primary forest, up to 450 m altitude."
	Energy Development Corporation (EDC) 2024. Canarium odontophyllum. The IUCN Red List of Threatened Species 2024: e.T197848207A203233686. https://dx.doi.org/10.2305/IUCN.UK.2024-1.RLTS.T197848207A203233686.en. [Accessed 21 Oct 2026]	"Canarium odontophyllum has most recently been assessed for The IUCN Red List of Threatened Species in 2022. Canarium odontophyllum is listed as Least Concern. "

602	Produces viable seed	y
	Source(s)	Notes

Qsn #	Question	Answer
	Masarip, A., Fui, Y. T., & El-Pebrian, D. (2020). Germination of Canarium odontophyllum seeds as affected by desiccation. Borneo Akademika, 4(2), 22-29	"Canarium odontophyllum is a rare tropical fruit that is primarily propagated by seeds. However, there is little information regarding its seed handling and germination. As low seed moisture content (MC), generally that below 10%, is the key determinant to successful seed storage while avoiding microbial damage, the objective of this study was, hence, set to investigate C. odontophyllum's seed germination as affected by desiccation using drying beads (DBs) at room temperature or convection oven at 40□ to varying seed MCs, from its initial MC of above 20% down to that below 10%. It was found that the seeds tolerated fast dehydration within 24h at room temperature using DBs. They retained 90% germination despite seed MC was reduced to below 10%. Desiccation tolerance with DBs was, however, found only with seeds extracted from fresh fruits. As the fruits started rotting with wrinkled appearance and fungi on the pericarp from four days after harvest onwards, the seeds extracted from them died at MC of below 15%. A slower seed drying method using convection oven at higher temperature of 40□, on the other hand, took 72h to bring the seed MC down to <10%, as compared to only 24h when DBs were used for the same purpose. However, this 40□ oven desiccation down to the same low MC of <10% was lethal. Storage of the seeds of this rare fruit species for future planting is, hence, presumed to be impossible, and seeds are best sown fresh.
	Ting, J. C., Ho, W. S., & Tawan, C. (2017). Flora morphology and sex specific marker development of a Sarawak's specialty fruit species Canarium odontophyllum. International Journal of Development and Sustainability, 6 (11), 1621-1637	"To date, there is no way for the dabai growers to differentiate a dabai's sex based on the physical appearance of the seedlings. It only can be known after the dabai trees attain reproductive maturity which is approximately after 4 years of planting. Propagation by means of cutting and grafting is still difficult and therefore, seeds are still preferred choice in propagating the dabai trees. There is a 50:50 chance of obtaining hermaphrodite trees. The current practice is to grow dabai seedlings in one area, allowing them to grow for 4 years or more until the sex types are identified, and then to eliminate the undesired male trees to establish an orchard with only hermaphrodite trees."

603	Hybridizes naturally	
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	Unknown; no species-specific evidence found. Canarium odontophyllum has not been clearly documented as naturally hybridizing with other species

604	Self-compatible or apomictic	n
	Source(s)	**Notes**
	Blancke, R. (2016). Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide. Cornell University Press, Ithaca, NY	"Dioecious, small yellowish flowers are produced in large panicles."

Qsn #	Question	Answer
	Ting, J. C., Ho, W. S., & Tawan, C. (2017). Flora morphology and sex specific marker development of a Sarawak's specialty fruit species Canarium odontophyllum. International Journal of Development and Sustainability, 6 (11), 1621-1637	"Taxonomical classification had once defined dabai as dioecious species with staminate (♂) and pistillate (♀) flowers borne on different plants. Our study on floral morphological study revealed one extraordinary yet unique characteristic on the pistillate flowers. Ordinary pistillate flower comprises style, stigma and ovary, collectively known as a typical female organ. Microscopy observation discovered that the pistillate flower of dabai appear to have both male and female organs on the same flower, considerably hermaphrodite flower. Despite this firm finding that may revise the dioecy characteristic of dabai, floral modification via male sterility was another interesting discovery. Male organ exists in the hermaphrodite flower comprises of six staminodes, indicating self-incompatibility or male sterility with no observation on anther, filaments or pollen availability. This floral modification lies beneath a principle where all flowering plants originate as hermaphroditic that undergo gradual floral modification into a diversified floral form, with an intention to promote outcrossing or cross-pollination (allogamy) (Nelson et al., 1989). Thus, it can conclude that dabai populations are androdioecious with both hermaphrodite and androecious individuals."

605	Requires specialist pollinators	n
	Source(s)	**Notes**
	Flora Fauna Web. (2026). Canarium odontophyllum Miq. https://www.nparks.gov.sg/florafaunaweb/flora/3/7/3776. [Accessed 22 Oct 2026]	"Pollination Method(s) Biotic (Fauna)"
	Kubitzki, K. (ed.). (2011). The Families and Genera of Vascular Plants. Vol. X. Flowering Plants. Eudicots: Sapindales, Cucurbitales, Myrtaceae. Springer, New York	[Family description] "Dioecy has been associated with the woody habit and entomophily (e.g., Matallana et al. 2005), and specifically with small generalist insect pollination (e.g., Bawa and Opler 1975); the relatively scant pollination literature on the family suggests that this holds true for most Burseraceae regardless of habitat,"

606	Reproduction by vegetative fragmentation	n
	Source(s)	**Notes**
	Ting, J. C., Ho, W. S., & Tawan, C. (2017). Flora morphology and sex specific marker development of a Sarawak's specialty fruit species Canarium odontophyllum. International Journal of Development and Sustainability, 6 (11), 1621-1637	"To date, there is no way for the dabai growers to differentiate a dabai's sex based on the physical appearance of the seedlings. It only can be known after the dabai trees attain reproductive maturity which is approximately after 4 years of planting. Propagation by means of cutting and grafting is still difficult and therefore, seeds are still preferred choice in propagating the dabai trees."

607	Minimum generative time (years)	>3
	Source(s)	**Notes**
	Ting, J. C., Ho, W. S., & Tawan, C. (2017). Flora morphology and sex specific marker development of a Sarawak's specialty fruit species Canarium odontophyllum. International Journal of Development and Sustainability, 6 (11), 1621-1637	"To date, there is no way for the dabai growers to differentiate a dabai's sex based on the physical appearance of the seedlings. It only can be known after the dabai trees attain reproductive maturity which is approximately after 4 years of planting."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	Hamzah, M. H., Mohd Basri, M. S., Maringgal, B., Mohd Ali, M., Wondi, M. H., Che Man, H., & Gatuk Abdulloh, S. (2022). Exploring Dabai (Canarium odontophyllum), indigenous fruit of Borneo: a review of nutritional values, potential uses, emerging application in essential oil processing, and health benefits. Plants, 11(19), 2646	"The fruit has an ellipsoid or oblong shape, approximately 3 to 4 cm long and 2 to 2.5 cm wide. The flesh thickness is approximately 0.4 to 0.7 cm, covering a single large seed [10]. As shown in Figure 2c,d, the typical length of the seed is approximately 3 to 4 cm, and its width is about 1.5 to 2 cm." [No evidence. Seeds relatively large and lack means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Blancke, R. (2016). Tropical Fruits and Other Edible Plants of the World: An Illustrated Guide. Cornell University Press, Ithaca, NY	[Yes, but uncommon] "Native to Borneo. Occasionally cultivated in Southeast Asia, especially in Malaysia, Indonesia, and the Philippines. In Borneo, fruits are often harvested from wild trees. Very rare in other tropical regions."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Hamzah, M. H., Mohd Basri, M. S., Maringgal, B., Mohd Ali, M., Wondi, M. H., Che Man, H., & Gatuk Abdulloh, S. (2022). Exploring Dabai (Canarium odontophyllum), indigenous fruit of Borneo: a review of nutritional values, potential uses, emerging application in essential oil processing, and health benefits. Plants, 11(19), 2646	"The fruit has an ellipsoid or oblong shape, approximately 3 to 4 cm long and 2 to 2.5 cm wide. The flesh thickness is approximately 0.4 to 0.7 cm, covering a single large seed [10]. As shown in Figure 2c,d, the typical length of the seed is approximately 3 to 4 cm, and its width is about 1.5 to 2 cm." [No evidence. Fruit and seeds relatively large and quickly lose viability]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	"Fruit is a fleshy oblong to ellipsoidal drupe, (35-40 mm long by 20-25 mm wide), white when immature, turning purplishblack when ripe with a thin, edible skin (Plates 5- 8). The white or yellow flesh inside is 4-7 mm thick (Plates 5-6) and covers a single large, three-angled pointed seed." [No evidence. Adapted for zoochory]

705	Propagules water dispersed	
	Source(s)	Notes
	Lim, T.K. (2012). Edible Medicinal and Non-Medicinal Plants. Volume 1, Fruits. Springer, New York	"Dabai occurs in undisturbed lowland forests up to 700 m altitude; mostly on hillsides and ridges, but sometimes also in swamps or along rivers in its native tropical range." [Adapted for zoochory, but occurrence along rivers suggest secondary dispersal by water may be possible. Research on other Canarium species has shown that fruits can float in streams, although this has not been confirmed specifically for C. odontophyllum.]

706	Propagules bird dispersed	y
	Source(s)	Notes
	uluulublog. (2022). Canarium odontophyllum (Dabai or Kembayau) hornbill dispersed. *Fruits & Seeds of Borneo*. https://seedsofborneo.com/2022/10/19/canarium-odontophyllum-dabai-or-kedondong-hornbill-dispersed/. [Accessed 23 Oct 2026]	"Hornbill dispersed"

Qsn #	Question	Answer
	Franco, F. M., & Minggu, M. J. (2019). When the seeds sprout, the hornbills hatch: understanding the traditional ecological knowledge of the Ibans of Brunei Darussalam on hornbills. Journal of Ethnobiology and Ethnomedicine, 15 (1), 46	"Table 3 Summary of Iban TEK on hornbills" [Table 3 lists Canarium odontophyllum as a fruit in the diet of multiple hornbill species, including the Asian Black Hornbill, Bushy-crested Hornbill, Helmeted Hornbill, Oriental Pied Hornbill, Rhinoceros Hornbill, White-crested Hornbill, Wreathed Hornbill, and Wrinkled Hornbill.]
	WRA Specialist. (2026). Personal Communication	With the exception of some game birds (possibly turkeys, peafowl, kalij pheasants etc.), the Hawaiian Islands likely lack birds capable of dispersing the relatively large seeds of this tree

707	Propagules dispersed by other animals (externally)	n
	Source(s)	**Notes**
	Franco, F. M., & Minggu, M. J. (2019). When the seeds sprout, the hornbills hatch: understanding the traditional ecological knowledge of the Ibans of Brunei Darussalam on hornbills. Journal of Ethnobiology and Ethnomedicine, 15 (1), 46	[Bird-dispersed] "Table 3 Summary of Iban TEK on hornbills" [Table 3 lists Canarium odontophyllum as a fruit in the diet of multiple hornbill species, including the Asian Black Hornbill, Bushy-crested Hornbill, Helmeted Hornbill, Oriental Pied Hornbill, Rhinoceros Hornbill, White-crested Hornbill, Wreathed Hornbill, and Wrinkled Hornbill.]

708	Propagules survive passage through the gut	y
	Source(s)	**Notes**
	Franco, F. M., & Minggu, M. J. (2019). When the seeds sprout, the hornbills hatch: understanding the traditional ecological knowledge of the Ibans of Brunei Darussalam on hornbills. Journal of Ethnobiology and Ethnomedicine, 15 (1), 46	[Presumably yes. Bird-dispersed] "Table 3 Summary of Iban TEK on hornbills" [Table 3 lists Canarium odontophyllum as a fruit in the diet of multiple hornbill species, including the Asian Black Hornbill, Bushy-crested Hornbill, Helmeted Hornbill, Oriental Pied Hornbill, Rhinoceros Hornbill, White-crested Hornbill, Wreathed Hornbill, and Wrinkled Hornbill.]

801	Prolific seed production (>1000/m2)	
	Source(s)	**Notes**
	Hamzah, M. H., Mohd Basri, M. S., Maringgal, B., Mohd Ali, M., Wondi, M. H., Che Man, H., & Gatuk Abdulloh, S. (2022). Exploring Dabai (Canarium odontophyllum), indigenous fruit of Borneo: a review of nutritional values, potential uses, emerging application in essential oil processing, and health benefits. Plants, 11(19), 2646	"The fruit has an ellipsoid or oblong shape, approximately 3 to 4 cm long and 2 to 2.5 cm wide. The flesh thickness is approximately 0.4 to 0.7 cm, covering a single large seed [10]. As shown in Figure 2c,d, the typical length of the seed is approximately 3 to 4 cm, and its width is about 1.5 to 2 cm." [Seeds densities unknown. Unlikely given relatively large fruit and seed size]

802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	**Notes**
	Masarip, A., Fui, Y. T., & El-Pebrian, D. (2020). Germination of Canarium odontophyllum seeds as affected by desiccation. Borneo Akademika, 4(2), 22-29	"Storage of the seeds of this rare fruit species for future planting is, hence, presumed to be impossible, and seeds are best sown fresh."

803	Well controlled by herbicides	
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	Unknown. No information on herbicide efficacy or evidence that this species has been controlled with herbicides

Qsn #	Question	Answer
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	Unknown

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. (2026). Personal Communication	Unknown

Summary of Risk Traits:

High-risk traits
Suited to tropical and subtropical climates, with a high-quality climate match
Native or naturalized in tropical regions
Produces viable seed
Propagules dispersed intentionally by people
Bird dispersed (hornbills)
Seeds survive passage through the gut

Low-risk traits
Not naturalized beyond its native range
Not a garden, agricultural, or environmental weed
No congeneric weeds
Narrow climate suitability (low-elevation tropics)
No spines, thorns, or burrs
Not parasitic
Not toxic to animals or humans, and not allergenic
No fire hazard
Does not tolerate a wide range of soils
No climbing or smothering habit, and does not form dense thickets
Not aquatic, a grass, nitrogen-fixing, or a geophyte
Not self-compatible, with no vegetative reproduction
Long generative time (more than 3 years)
Not dispersed unintentionally, by wind, or externally by animals, and not a produce contaminant
No persistent seed bank (seeds are recalcitrant)