

Taxon: <i>Pometia pinnata</i> J. R. Forst. & G. Forst.	Family: Sapindaceae
Common Name(s): Fijian Longan island lychee ndawa oceanic lychee Pacific lychee	Synonym(s): Euphoria pinnata Poir., nom. inval.

Assessor: Chuck Chimera	Status: Approved	End Date: 12 Sep 2023
WRA Score: 4.0	Designation: EVALUATE	Rating: Evaluate

Keywords: Tropical Tree, Edible Fruit, Shade-Tolerant, Self-Fertile, 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	y
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		

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		
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	y
706	Propagules bird dispersed	y = 1, n = -1	y
707	Propagules dispersed by other animals (externally)	y = 1, n = -1	n
708	Propagules survive passage through the gut	y = 1, n = -1	y
801	Prolific seed production (>1000/m ²)	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	y = 1, n = -1	y
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. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"Pometia pinnata is indigenous in Andaman Islands, Sri Lanka, south China, Vietnam, Malaysia, Indonesia, Philippines, Papua New Guinea and the South Pacific islands. The species is highly polymorphic and Jacobs (1962) has recognized eight distinctive forms and many unclassified paramorphs ... "
	Thomson, L. A. J., & Thaman, R. R. (2006). Pometia pinnata (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed]	[Larger fruit selection may reduce risk of spread, but evidence of significant domestication is lacking] "The greatest utilization of fruits occurs in New Guinea, the Solomon Islands, Vanuatu, and Fiji, which are associated with the selection and domestication of superior fruit types and the absence, until recently, of related Asian fruits trees such as rambutan and lychee."
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	[Selection for fruit size has occurred, but not heavily domesticated] "Local varieties of P. pinnata used for fruit production have been selected and bred to obtain larger and better-tasting fruit. A race with very large arillodes has been bred in Santa Cruz (the Solomon Islands)."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2023). 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. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"Pometia pinnata is indigenous in Andaman Islands, Sri Lanka, south China, Vietnam, Malaysia, Indonesia, Philippines, Papua New Guinea and the South Pacific islands."

202	Quality of climate match data	High
	Source(s)	Notes
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"Pometia pinnata is indigenous in Andaman Islands, Sri Lanka, south China, Vietnam, Malaysia, Indonesia, Philippines, Papua New Guinea and the South Pacific islands."

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed]	"Grows naturally in warm to hot, humid subtropical and tropical zones, elevation 0-500 (-1700) m (0-1640 [-5580] ft) with annual rainfall of 1500-5000 mm (60-200 in)."
	Westphal, E., & Jansen, P. C. M. (Eds.). (1989). <i>Plant Resources of South-East Asia. A Selection</i> . Pudoc/Prosea, Wageningen, Netherlands	"It cannot tolerate a severely seasonal climate."
	Lim, T.K. (2013). <i>Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits</i> . Springer, Dordrecht	"The species is adapted to the warm to hot, humid and wet subtropical to tropical region from 14°N to 20°S with mean annual rainfall ranging from 1,500 to 5,000 mm. In its native range in Malesia, it is found in undisturbed mixed dipterocarp, forests up to 700 m altitude, often on alluvial sites and along or near rivers and streams, but also on hillsides. In secondary forests it is usually present as a pre-disturbance remnant."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"In Fiji and Tonga it is rarely found in undisturbed primary forest and is considered mainly a planted or cultivated species, i.e., where naturalized it is found only in secondary forests."
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2023). <i>Plants of Hawai'i</i> . http://www.plantsofhawaii.org . [Accessed 8 Sep 2023]	"Only found in cultivation"
	Lim, T.K. (2013). <i>Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits</i> . Springer, Dordrecht	" <i>Pometia pinnata</i> is indigenous in Andaman Islands, Sri Lanka, south China, Vietnam, Malaysia, Indonesia, Philippines, Papua New Guinea and the South Pacific islands."

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"It is possibly an aboriginal introduction into some of the more eastern parts of its range in Polynesia, and probably a post-European-contact introduction into the Cook Islands and French Polynesia." [Unclear where it has been introduced.]

301	Naturalized beyond native range	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed]	"In Fiji and Tonga it is rarely found in undisturbed primary forest and is considered mainly a planted or cultivated species, i.e., where naturalized it is found only in secondary forests."
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2023). <i>Plants of Hawai'i</i> . http://www.plantsofhawaii.org . [Accessed 8 Sep 2023]	"Only found in cultivation"

Qsn #	Question	Answer
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	" <i>Pometia pinnata</i> J.R.Forst. & G.Forst. Sapindaceae Total N° of Refs: 4 Habit: Tree Preferred Climate/s: Subtropical, Tropical Origin: SE Asia Major Pathway/s: Crop, Forestry, Herbal, Ornamental Dispersed by: Humans References: Global-N-85, French Polynesia-N-1514, Taiwan-W-1748, Marshall Islands-W-1977."
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Sep 2023]	[Reports of naturalization in the Hawaiian Islands may be erroneous] "Naturalized Pacific NORTH-CENTRAL PACIFIC: United States [Hawaii] NORTHWESTERN PACIFIC: Micronesia SOUTH-CENTRAL PACIFIC: French Polynesia SOUTHWESTERN PACIFIC: New Caledonia"

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	"References: Global-N-85, French Polynesia-N-1514, Taiwan-W-1748, Marshall Islands-W-1977." [Reports of weediness in Taiwan and the Marshall Islands not supported by cited references.]
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org/ . [Accessed 12 Sep 2023]	"The species is considered to have a low invasive potential, at least to spread rapidly. In forests remote from human habitation, the majority of the tava fruits/seeds fall near the parent tree. It is likely that dispersal by bats and birds will result in some medium-distance dispersal, i.e., up to several hundred meters away from the parent tree, and infrequently results in long-distance dispersal. In the South Pacific there is a good correlation between the distribution of fruit bats and tava. In areas where its fruits are consumed by humans, it is likely that tava seeds were distributed widely by humans, both inadvertently and deliberately."
	CABI. (2023). Invasive Species Compendium. Wallingford, UK: CAB International. https://www.cabidigitallibrary.org/product/qi . [Accessed 8 Sep 2023]	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] "References: Global-N-85, French Polynesia-N-1514, Taiwan-W-1748, Marshall Islands-W-1977." [Reports of weediness in Taiwan and the Marshall Islands not supported by cited references.]
	CABI. (2023). Invasive Species Compendium. Wallingford, UK: CAB International. https://www.cabidigitallibrary.org/product/qi . [Accessed 8 Sep 2023]	No evidence

Qsn #	Question	Answer
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] "References: Global-N-85, French Polynesia-N-1514, Taiwan-W-1748, Marshall Islands-W-1977." [Reports of weediness in Taiwan and the Marshall Islands not supported by cited references.]
	CABI. (2023). Invasive Species Compendium. Wallingford, UK: CAB International. https://www.cabidigitallibrary.org/product/qi . [Accessed 8 Sep 2023]	No evidence

Qsn #	Question	Answer
305	Congeneric weed	n
	Source(s)	Notes
	Kubitzki, K. (ed.). (2011). The Families and Genera of Vascular Plants. Vol. X. Flowering Plants. Eudicots: Sapindales, Cucurbitales, Myrtaceae. Springer, New York	[No evidence] "Two species found in Sri Lanka, Andaman and Nicobar Islands, Indochina, Taiwan, Malesia, Fiji, Samoa, and Tonga."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	CABI. (2023). Invasive Species Compendium. Wallingford, UK: CAB International. https://www.cabidigitallibrary.org/product/qi . [Accessed 8 Sep 2023]	No evidence

Qsn #	Question	Answer
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Westphal, E., & Jansen, P. C. M. (Eds.). (1989). Plant Resources of South-East Asia. A Selection. Pudoc/Prosea, Wageningen, Netherlands	"Large, evergreen or deciduous tree, up to 47 m high, bole up to 25 m long, straight or curved, often twisted, with a diameter at breast height up to 1 m if buttresses are absent; buttresses up to 6 m, spreading up to 3.5 m from the bole centre; bark brownish grey to reddish brown, shedding small, pock-marked, thick flakes; live bark with abundant thin red gum. Branchlets, rachis, underside of leaflets, and inflorescence more or less glabrescent to glabrous. Leaf 24-85 cm long, with 8-12 pairs of leaflets; leaflets oblong to mostly lanceolate, the first pair stipule-like; nerves 11-25 pairs, every other nerve ending in a marginal hydathode or tooth, the intermediate nerves bending upwards and without reaching the more or less dentate margin. Flowers actinomorphic, unisexual. 5-merous, small and cream-white, in 15-60 cm long, variable inflorescences. Fruit ellipsoid, up to 3.5 cm x 3 cm, very variable in size and colour, with pericarp 2-7 cm thick and arillode up to 0.4 cm thick. Seeds half to three-quarters of the size of the fruit, shiny brown. Germination epigeal; cotyledons slightly sagittate, first pair of leaves subopposite with 5 serrate leaflets."

Qsn #	Question	Answer
402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown. No evidence found

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"P. pinnata is a small to large, evergreen tree, typically 12-20 m (~50 m) high with a large, spreading crown with a spread of 10-20 m across. The bole is cylindrical, straight up to 7 m high and diameter up to 30 cm with fawnish to reddish bark. Old trees have distinct buttresses." [No evidence]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 11 Sep 2023]	"It has not been recorded as an animal fodder." [Palatability of foliage unknown]

405	Toxic to animals	n
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2023). <i>Pometia pinnata</i> . https://tropical.theferns.info/viewtropical.php?id=Pometia%20pinnata . [Accessed 11 Sep 2023]	"Known Hazards None known"
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 11 Sep 2023]	[No evidence] "It is an important food tree for animals and birds. The fruits are consumed by fruit bats (Pteropinae) and birds, including pigeons."
	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
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"Kasai trees often show malformations known as witches' broom, caused by a fungus or virus. Locally in Papua New Guinea a large number of kasai trees have been reported to be affected by an unidentified fungus causing white rot; the wood of affected logs is only suitable for pulping. In Peninsular Malaysia there are reports of fruits damaged by the moth <i>Conopomorpha cramerella</i> (Gracillaridae)."
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 11 Sep 2023]	"Tava is reported to be a common wild host for the beetle <i>Oxymagis horni</i> , the larvae of which are a very serious pest of <i>Eucalyptus deglupta</i> in the Solomon Islands."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2023). <i>Pometia pinnata</i> . https://tropical.theferns.info/viewtropical.php?id=Pometia%20pinnata . [Accessed 11 Sep 2023]	"Known Hazards None known"

Qsn #	Question	Answer
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	[No evidence] "Kasai is a good general-purpose wood for interior construction. The wood is suitable for domestic flooring, mouldings, joinery, ship and boat building, spars, tool handles, agricultural and sporting implements, interior trimming, blockboard, and tight cooperage. It is well accepted for making boxes and crates. On the export market kasai is recommended for joinery (windows, solid doors, framing, weather-boarding) and flooring for both light and medium pedestrian traffic. In outdoor constructions contact with the ground must be prevented as the wood is then not durable. The timber is used for furniture and cabinet work but must be dried to a sufficiently low moisture content. It is suitable for hardboard and particle board and as pulpwood. The wood makes a good-quality veneer which has potential to be used as decorative veneer and is very suitable for core and outer layers of plywood. Kasai may produce a good charcoal for domestic or industrial purposes. The arillode of the fruit of trees cultivated for fruit production is eaten fresh and tastes like rambutan; it is of local interest only, e.g. in the Sentani Lake region of Irian Jaya, where especially purplish fruits are preferred and selected. The roasted seeds of kasai are also edible. A decoction of the leaves or bark is used medicinally against fever and sores. In Papua New Guinea kasai is sometimes planted in a cycle of shifting cultivation and its leaves are used as a mulch and green manure in yam cultivation."
	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	
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 11 Sep 2023]	[Susceptible to fire, but does not naturally occur in fire prone areas] "Mean annual rainfall 1500-5000 mm (60-200 in) Rainfall pattern Grows in climates with summer, bimodal, and uniform rainfall patterns." ... "The tree is susceptible to fire."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 11 Sep 2023]	"Shade. The tree tolerates 0-50% shade. Young seedlings and saplings are tolerant of high levels of shade. Planting under existing light to mid-density canopy (<50% shade) is a suitable technique for establishing plantings of tava."
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"The species is shade tolerant up to 50% shade but grows well in full to partial sun."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"It occurs on a variety of soils, on limestone, clayey, sandy or loamy soils, mostly in dryland forest, occasionally in freshwater swamps."

Qsn #	Question	Answer
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"It thrives on a wide range of soils but does best on slightly acidic to neutral (pH 5-7), well drained, fertile sandy, loamy and clayey soils, but will tolerate mildly alkaline soils of pH 7-8 and even soils with impeded drainage."
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 11 Sep 2023]	"Tava has a wide edaphic range but attains its best development on well drained, fertile loams and clays. In PNG the commercially important better timber tree forms of <i>f. pinnata</i> are found on better drained sites, whereas the poorer formed trees of <i>f. glabra</i> mainly occur on river flats and in low-lying areas. Soil texture. It grows in medium and heavy texture soils (loams, sandy clay loams, clay loams, sandy clays, and clays). Soil drainage. The tree grows in soils with both free and impeded drainage, as well as in seasonally waterlogged soils. Soil acidity. Tava grows in acid to mildly alkaline soils (pH 4.0-8.0)."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	" <i>P. pinnata</i> is a small to large, evergreen tree, typically 12-20 m (~50 m) high with a large, spreading crown with a spread of 10-20 m across. The bole is cylindrical, straight up to 7 m high and diameter up to 30 cm with fawnish to reddish bark. Old trees have distinct buttresses."

412	Forms dense thickets	n
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"Although there is no data available, the density of tava trees is estimated at 50 trees/ha (20 trees/ac)."
	Westphal, E., & Jansen, P. C. M. (Eds.). (1989). Plant Resources of South-East Asia. A Selection. Pudoc/Prosea, Wageningen, Netherlands	"In Peninsular Malaysia it is never dominant in the forests but mainly found along the rivers. On Borneo and Sumatra, it occurs occasionally in fresh water swamp forest, otherwise common in dry land forest. In New Guinea it is not seldom dominant in forest partly under human influence, on various soil types, preferring well drained limestone soils (<i>P. pinnata</i> f. <i>pinnata</i> and f. <i>repanda</i>)."
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"[No pure stands encountered, even where dense regeneration occurs] "Regeneration counts have recorded more than 1000 young trees/ha, which might be sufficient to establish pure stands. No such pure stands are encountered, however, and commonly a mixture with other commercial species such as <i>Dracontomelon dao</i> (Blanco) Merr. & Rolfe is present."

501	Aquatic	n
	Source(s)	Notes
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"[Terrestrial] "In its native range in Malesia, it is found in undisturbed mixed dipterocarp, forests up to 700 m altitude, often on alluvial sites and along or near rivers and streams, but also on hillsides. In secondary forests it is usually present as a pre-disturbance remnant."

502	Grass	n
	Source(s)	Notes

Qsn #	Question	Answer
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 8 Sep 2023]	"Genus: Pometia Family: Sapindaceae Subfamily: Sapindoideae"
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	Family Sapindaceae
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Lim, T.K. (2013). Edible Medicinal And Non-Medicinal Plants. Volume 6, Fruits. Springer, Dordrecht	"P. pinnata is a small to large, evergreen tree, typically 12-20 m (~50 m) high with a large, spreading crown with a spread of 10-20 m across. The bole is cylindrical, straight up to 7 m high and diameter up to 30 cm with fawnish to reddish bark. Old trees have distinct buttresses."
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"Genetic resources and breeding. Conservation does not seem to be a priority for the moment, but the extreme variability of P. pinnata might be diminished by local eradication through large-scale clearing of the forest."
	Thomson, L. A. J., & Thaman, R. R. (2006). Pometia pinnata (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"Tava has a wide natural distribution in the Asia-Pacific region mainly in lowland subtropical and tropical areas from about 14°N to 20°S."
602	Produces viable seed	y
	Source(s)	Notes
	Westphal, E., & Jansen, P. C. M. (Eds.). (1989). Plant Resources of South-East Asia. A Selection. Pudoc/Prosea, Wageningen, Netherlands	"Propagation is by seed. Natural regeneration from seed often has been observed as quite abundant, e.g. at Keravat (Papua New Guinea) and Jayapura and Manokwari (Irian Jaya), on devastated or clear-cut forest areas."
	Thomson, L. A. J., & Thaman, R. R. (2006). Pometia pinnata (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"Stands may be established either by direct sowing, seedling planting stock, or assisted natural regeneration (by removal of smothering vines). Vegetative propagation by stem cuttings is possible, and this may be a useful technique for mass propagation of selected material."
603	Hybridizes naturally	n
	Source(s)	Notes
	Kubitzki, K. (ed.). (2011). The Families and Genera of Vascular Plants. Vol. X. Flowering Plants. Eudicots: Sapindales, Cucurbitales, Myrtaceae. Springer, New York	[No evidence] "Two species found in Sri Lanka, Andaman and Nicobar Islands, Indochina, Taiwan, Malesia, Fiji, Samoa, and Tonga."

Qsn #	Question	Answer
604	Self-compatible or apomictic	y
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"Bisexual and male flowers are reported to occur on a single tree of <i>P. pinnata</i> , but the structurally hermaphrodite flowers are functionally female with no anther dehiscence. Both cross-fertilization and self-fertilization occur."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"Inflorescence a terminal or rarely axillary panicle of about 15-60 cm long. Flowers functionally unisexual, actinomorphic, 5-merous, small; petals cream-white, disk annular." ... "Both cross-fertilization and self-fertilization occur. Usually there are 3-4 times as many male as female flowers."
	Roubik, D.W., Sakai, S., & Hamid Karim, A.A. (eds.). (2005). Pollination ecology and the rain forest: Sarawak studies. Springer, New York, NY	[Bee-pollinated] "Appendix A. Reproductive traits, floral characters, and pollinators of 270 plant species (73 families) in a lowland dipterocarp forest at LHNP, Sarawak" [<i>Pometia pinnata</i> - Main pollinators = <i>Braunsapis</i> . <i>Braunsapis</i> is a genus of bees in the tribe Allodapini. It is the largest genus of the tribe and is known for its array of social behaviors.]

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 12 Sep 2023]	[No evidence of natural vegetative spread] "Experiments in PNG have shown that the species can be vegetatively propagated. Initial trials resulted in 50% rooting, but this was increased up to 100% by refining the technique using cutting material taken from older hedge plants (20 months). The most successful results were achieved by using shoot cutting material 3-5 cm (1.2-2 in) in length. The leaf area was reduced to about one third of its original size, and a rooting hormone gel (0.3% IBA) was used."

607	Minimum generative time (years)	3
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"The age to first flowering and fruiting is not well documented and possibly varies among forms and genotypes. Fruits mature about 3-4 months after flowering."
	Seeds Del Mundo. (2023). <i>Pometia pinnata</i> (Matoa / Fijian Longan). https://www.seedsdelmundo.com/product/pometia-pinnata/ . [Accessed 8 Sep 2023]	[Anecdotal] "We were able to harvest our first fruits when the tree was less than 3 years old and at a height of more than 4 meters."

Qsn #	Question	Answer
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	[No evidence. Fruit and seeds also large and lack means of external attachment] "Fruit a schizocarp, mostly simple by abortion, smooth, ellipsoid, up to 3.5 cm × 3 cm, coloured in variations of yellow, red, purple or brown, pericarp 2-7 mm thick. Seed half to three-quarters of the size of the fruit, covered by an arillode of up to 4 mm thick, shiny brown or red-brown." ... "Dispersal of the fruits is probably mostly by bats and birds."
702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 12 Sep 2023]	"It is possibly an aboriginal introduction into some of the more eastern parts of its range in Polynesia, and probably a post-European-contact introduction into the Cook Islands and French Polynesia."
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2023). Plants of Hawai'i. http://www.plantsofhawaii.org . [Accessed 12 Sep 2023]	"Only found in cultivation"
703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"Fruit a schizocarp, mostly simple by abortion, smooth, ellipsoid, up to 3.5 cm × 3 cm, coloured in variations of yellow, red, purple or brown, pericarp 2-7 mm thick. Seed half to three-quarters of the size of the fruit, covered by an arillode of up to 4 mm thick, shiny brown or red-brown." [Fruits and seeds large and lack means of attachment]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"Fruit a schizocarp, mostly simple by abortion, smooth, ellipsoid, up to 3.5 cm × 3 cm, coloured in variations of yellow, red, purple or brown, pericarp 2-7 mm thick. Seed half to three-quarters of the size of the fruit, covered by an arillode of up to 4 mm thick, shiny brown or red-brown." ... "Dispersal of the fruits is probably mostly by bats and birds."
705	Propagules water dispersed	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 12 Sep 2023]	"Fruits are mainly dispersed by fruit bats (Pteropinae), birds, including pigeons in Samoa, and humans. Water dispersal is also likely in riverine populations."
706	Propagules bird dispersed	y

Qsn #	Question	Answer
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 12 Sep 2023]	"Fruits are mainly dispersed by fruit bats (Pteropinae), birds, including pigeons in Samoa, and humans. Water dispersal is also likely in riverine populations."
	Hamann, A., & Curio, E. (1999). Interactions among frugivores and fleshy fruit trees in a Philippine submontane rainforest. <i>Conservation Biology</i> , 13(4), 766-773	[Depends on larger birds for dispersal] "In fact, 60% of all late-successional species would lose all dispersal agents observed if large avian frugivores were hunted to extinction. <i>Myristica ceylanica</i> , <i>Pometia pinnata</i> , and <i>Aglaia</i> sp. appear to depend solely on the two species of hornbills for seed dispersal, and these are considered critically endangered (Collar et al. 1994)."
	WRA Specialist. (2023). Personal Communication	Although bird dispersed, the relatively large fruit and seed size may limit the ability for birds in the Hawaiian Islands to effectively disperse the seeds. Larger game birds may possibly disperse seeds.

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 12 Sep 2023]	"Fruits are mainly dispersed by fruit bats (Pteropinae), birds, including pigeons in Samoa, and humans. Water dispersal is also likely in riverine populations."

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 12 Sep 2023]	[Presumably Yes] "Fruits are mainly dispersed by fruit bats (Pteropinae), birds, including pigeons in Samoa, and humans. Water dispersal is also likely in riverine populations."

801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Dou, L., Zhang, W., Deng, X., Cao, M., & Tang, Y. (2018). Nine-year seed rain dynamics in <i>Parashorea chinensis</i> forest in Xishuangbanna, Southwest China. <i>Biodiversity Science</i> , 26(9), 919-930	"Table 2 Top 10 dominant species with the most abundant seed input for four seed types" [<i>Pometia pinnata</i> - Density (seeds·m ⁻² ·yr ⁻¹) = 0.7]
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). <i>Plant Resources of South-East Asia</i> . No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	[High densities, but not in excess of 1000 m ⁻²] "Natural regeneration from seeds has often been observed as quite abundant in disturbed or clear-cut forest areas, e.g. at Keravat (Papua New Guinea) and Jayapura and Manokwari (Irian Jaya). Regeneration counts have recorded more than 1000 young trees/ha, which might be sufficient to establish pure stands. No such pure stands are encountered, however"

802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), ver. 2.1. In: Elevitch, C.R. (ed.). <i>Species Profiles for Pacific Island Agroforestry</i> . Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"Seed storage Seeds are recalcitrant and seed moisture content is about 35-55%. Under suitable conditions, including good air ventilation around fruits and cool temperatures (e.g., 10-15°C [50-59°F]), the seed can be stored for up to 6 weeks with the skin intact."

Qsn #	Question	Answer
	Soerianegara, I. & Lemmens, R.H.M.J. (Eds.). (1993). Plant Resources of South-East Asia. No 5(1). Timber Trees: Major Commercial Timbers. Pudoc Scientific Publishers, Wageningen, Netherlands	"The seeds have no dormancy and start to germinate 1-5 weeks after sowing or after they have fallen to the ground. On cleared land in New Guinea, kasai seedlings often soon establish, probably from seeds dropped by birds or bats. Removal of pericarp and arillode promotes seed germination, and when these are removed, germination takes place within 3 days when sown in pots in the greenhouse, with a germination rate of 85-95%."

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Thomson, L. A. J., & Thaman, R. R. (2006). <i>Pometia pinnata</i> (tava), var. 2.1. In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Holualoa, HI. http://www.traditionaltree.org . [Accessed 8 Sep 2023]	"The tree is susceptible to fire." ... "Younger specimens may coppice, but coppicing of mature trees is unknown." ... "Trees have been observed to regrow well following pollarding (and cyclone breakage of larger limbs). Regular cutting back or light pruning during fruit collection appears to stimulate subsequent fruiting."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown

Summary of Risk Traits:

Pometia pinnata (Fijian Longan, Pacific lychee) is a small to large, evergreen tree native to various countries in Southeast Asia and the Pacific region, including Indonesia, Papua New Guinea, Fiji, Samoa, and the Solomon Islands. It is sometimes cultivated for its edible fruit and boiled or roasted seeds, and can naturalize in secondary forest, but is not documented as naturalized in the Hawaiian Islands to date. It may be able to establish and spread in the Hawaiian Islands, but the relatively large fruit and seeds may limit the ability of most birds to act as effective, long-distance dispersers.

High Risk / Undesirable Traits

- Thrives and can spread in regions with tropical climates
- Naturalized in secondary forest within its native and introduced range.
- Shade tolerant (could potentially invade intact native forests).
- Tolerates many soil types (not substrate limited).
- Reproduces by seeds.
- Capable of self-fertilization
- May reach maturity in 3 years.
- Seeds dispersed by birds, fruit bats, water, and through intentional cultivation.
- Younger plants may coppice and tolerate cutting and pollarding.

Low Risk Traits

- Only reported to naturalize in secondary forest, and not documented as naturalized in the Hawaiian Islands to date.
- Unarmed (no spines, thorns, or burrs)
- Valued for its wood, edible fruit and edible seeds (roaster or boiled).
- Non-toxic
- Relatively large fruits and seeds may limit accidental or long-distance dispersal and may be too large for most birds present in the Hawaiian Islands to consume and effectively disperse.