Key Words: Low Risk, Possibly Naturalized, Widely cultivated, Tropical Fruit Tree, Apomictic

Family: ***Meliaceae***

Taxon: ***Lansium domesticum***

Synonym: *Aglaia domestica (Corrêa ex Jack) Pellegr.*
Aglaia dookoo Griff.
Aglaia aquea (Jacq.) Kosterm.
Aglaia intricatoreticulata Kosterm.
Aglaia sepalina (Kosterm.) Kosterm.
Aglaia steenisii Kosterm.
Amoora racemosa Ridl.
Lachanodendron domesticum Nees

Common Name: langsat
langsep
longkong
lanzones

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** L
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score 0**

101	**Is the species highly domesticated?**	**y=-3, n=0**	**n**
102	**Has the species become naturalized where grown?**	**y=1, n=-1**	
103	**Does the species have weedy races?**	**y=1, n=-1**	
201	**Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
202	**Quality of climate match data**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
203	**Broad climate suitability (environmental versatility)**	**y=1, n=0**	**n**
204	**Native or naturalized in regions with tropical or subtropical climates**	**y=1, n=0**	**y**
205	**Does the species have a history of repeated introductions outside its natural range?**	**y=-2, ?=-1, n=0**	**y**
301	**Naturalized beyond native range**	**y = 1*multiplier (see Appendix 2), n= question 205**	
302	**Garden/amenity/disturbance weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
303	**Agricultural/forestry/horticultural weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
304	**Environmental weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	**n**
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	
405	**Toxic to animals**	**y=1, n=0**	
406	**Host for recognized pests and pathogens**	**y=1, n=0**	
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	

408	**Creates a fire hazard in natural ecosystems**	**y=1, n=0**	**n**
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	**y**
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	**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**	**y=1, n=-1**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	**y**
605	**Requires specialist pollinators**	**y=-1, n=0**	**n**
606	**Reproduction by vegetative fragmentation**	**y=1, n=-1**	**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**	
702	**Propagules dispersed intentionally by people**	**y=1, n=-1**	**y**
703	**Propagules likely to disperse as a produce contaminant**	**y=1, n=-1**	**n**
704	**Propagules adapted to wind dispersal**	**y=1, n=-1**	**n**
705	**Propagules water dispersed**	**y=1, n=-1**	**n**
706	**Propagules bird dispersed**	**y=1, n=-1**	**y**
707	**Propagules dispersed by other animals (externally)**	**y=1, n=-1**	
708	**Propagules survive passage through the gut**	**y=1, n=-1**	**y**
801	**Prolific seed production (>1000/m2)**	**y=1, n=-1**	**n**
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	**n**
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: L **WRA Score** **0**

Supporting Data:

101	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Is the species highly domesticated? No, although this assessment refers to the langsat, or wild type. Seedless varieties would be much less likely to spread] "There are two distinct botanical varieties: 1) L. domesticum var. pubescens, the typical wild langsat which is a rather slender, open tree with hairy branchlets and nearly round, thick skinned fruits having much milky latex; 2) var. domesticum, called the duku, doekoe, or dookoo, which is a more robust tree, broad topped and densely foliaged with conspicuously-veined leaflets; the fruits, borne few to a cluster, are oblong-ovoid or ellipsoid, with thin, brownish skin, only faintly aromatic and containing little or no milky latex. The former is often referred to as the "wild" type but both varieties are cultivated and show considerable range of form, size and quality. There are desirable types in both groups. Some small fruits are completely seedless and fairly sweet."
101	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Is the species highly domesticated? Certain cultivars may be highly domesticated] "Lansium domesticum is one of the important native fruit trees of Malesia but it is scarcely grown on a plantation scale, most of the fruits seen in markets being collected from village trees. Forms have been in cultivation for a long time, those in Java in 1413 being remarked on by the Chinese traveler Ma Huan"
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Species suited to tropical or subtropical climate(s) 2-High] "The langsat originated in western Malaysia and is common both wild and cultivated throughout the Archipelago and on the island of Luzon in the Philippines where the fruits are very popular and the tree is being utilized in reforestation of hilly areas."
202	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Quality of climate match data 2-High]
203	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Broad climate suitability (environmental versatility)? No] "The langsat is ultra-tropical. Even in its native territory it cannot be grown at an altitude over 2,100 to 2,500 ft (650-750 m). It needs a humid atmosphere, plenty of moisture and will not tolerate long dry seasons."
204	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Distribution — Peninsular Thailand; Malesia (wild, cultivated and naturalized): Sumatra. Malay Peninsula. Borneo, Java, Philippines (?native). Celebes (?native). Moluccas (?native). West New Guinea (?native). Cultivated in Indochina, India, Florida etc."
205	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Does the species have a history of repeated introductions outside its natural range? Yes] "The langsat originated in western Malaysia and is common both wild and cultivated throughout the Archipelago and on the island of Luzon in the Philippines where the fruits are very popular and the tree is being utilized in reforestation of hilly areas. It is much grown, too, in southern Thailand and Vietnam and flourishes in the Nilgiris and other humid areas of South India and the fruits are plentiful on local markets. The langsat was introduced into Hawaii before 1930 and is frequently grown at low elevations. An occasional tree may be found on other Pacific islands. The species is little known in the American tropics except in Surinam. There it is commercially grown on a small scale. Seeds were sent from Java to the Lancetilla Experimental Garden at Tela, Honduras, in 1926 and plants arrived from the same source in 1927. The trees have grown well but are usually unfruitful, occasionally having a small number of fruits. There are bearing trees in Trinidad, where the langsat was established in 1938, and a few around Mayaguez, Puerto Rico, that have been bearing well for about 60 years. There were young specimens growing on St. Croix in 1930."
205	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Does the species have a history of repeated introductions outside its natural range? Hawaiian Islands] "…introduced to Hawaii before 1930 and is now being grown by tropical fruit enthusiasts."

301	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Naturalized beyond native range? Questionably] "Distribution — Peninsular Thailand; Malesia (wild, cultivated and naturalized): Sumatra. Malay Peninsula. Borneo, Java, Philippines (?native). Celebes (?native). Moluccas (?native). West New Guinea (?native). Cultivated in Indochina, India, Florida etc."
301	2011. Guézou, A. et al.. CDF Checklist of Galapagos Introduced Plants. In: Bungartz, F. et al. (eds.). CDF Galapagos Species Checklist. Charles Darwin Foundation, Puerto Ayora, Galapagos http://www.darwinfoundation.org/datazone/checklists/ecological-group	[Naturalized beyond native range? No evidence in Galapagos] "Origin: Introduced, Cultivated."
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No evidence]
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No evidence]
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No evidence]
305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No evidence]
401	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Produces spines, thorns or burrs? No] "The tree is erect, short-trunked, slender or spreading; reaching 35 to 50 ft (10.5 to 15 m) in height, with red-brown or yellow brown, furrowed bark. Its leaves are pinnate, 9 to 20 in (22.5-50 cm) long, with 5 to 7 alternate leaflets, obovate or elliptic-oblong, pointed at both ends, 2 3/4 to 8 in (7-20 cm) long, slightly leathery, dark-green and glossy on the upper surface, paler and dull beneath, and with prominent midrib."
402	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Allelopathic? No evidence] "Shading is necessary and hence, the crop is frequently inter-cropped."
403	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Parasitic? No] "An evergreen, small, short-trunked, lactiferous sized tree, reaching heights of 10 20 m" [Meliaceae]
404	2012. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Toxic to animals? Unknown. Peel may be toxic] "The peel of the langsat is easily removed and the flesh is commonly eaten out-of-hand or served as dessert, and may be cooked in various ways. Varieties with much latex are best dipped into boiling water to eliminate the gumminess before peeling. The peeled, seedless or seeded fruits are canned in sirup or sometimes candied." "An arrow poison has been made from the fruit peel and the bark of the tree. Both possess a toxic property, lansium acid, which, on injection, arrests heartbeat in frogs. The peel is reportedly high in tannin. The seed contains a minute amount of an unnamed alkaloid, 1% of an alcohol soluble resin, and 2 bitter, toxic principles."
406	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Host for recognized pests and pathogens?] "In Puerto Rico, young langsat trees have been defoliated by the sugarcane root borer, Diaprepes abbreviatus. Scale insects, especially Pseudaonidia articulatus and Pseudaulacaspis pentagona, and the red spider mite, Tetranychus bimaculatus, are sometimes found attacking the foliage, and sooty mold is apt to develop on the honeydew deposited by the scales. Rats gnaw on the branchlets and branches and the mature fruits. Anthracnose caused by Colletotrichum gloeosporioides is evidenced by brown spots and other blemishes on the fruit and peduncle and leads to premature shedding of fruits. Canker which makes the bark become rough and corky and flake off has appeared on langsats in Florida, Hawaii and Tahiti. It was believed to be caused by a fungus, Cephalosporium sp., and larvae of a member of the Tineidae have been observed feeding under the loosened bark. However, other fungi, Nectria sp. (perfect stage of Volutella sp.) and Phomopsis sp. are officially recorded as causes of stem gall canker on the langsat in Florida."

407	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Causes allergies or is otherwise toxic to humans? Peel may be toxic] "The peel of the langsat is easily removed and the flesh is commonly eaten out-of-hand or served as dessert, and may be cooked in various ways. Varieties with much latex are best dipped into boiling water to eliminate the gumminess before peeling. The peeled, seedless or seeded fruits are canned in sirup or sometimes candied." "An arrow poison has been made from the fruit peel and the bark of the tree. Both possess a toxic property, lansium acid, which, on injection, arrests heartbeat in frogs. The peel is reportedly high in tannin. The seed contains a minute amount of an unnamed alkaloid, 1% of an alcohol-soluble resin, and 2 bitter, toxic principles."
408	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Creates a fire hazard in natural ecosystems? No evidence] "Habitat & Ecology — Rain forest including kerengas and on limestone. 0-1 10 m altitude." [Habitat and cultivation suggest no]
409	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Some shade is beneficial especially during the early years."
409	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Shading is necessary and hence, the crop is frequently inter-cropped."
410	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Tolerates a wide range of soil conditions? No] "The tree does best on deep, rich, well drained, sandy loam or other soils that are slightly acid to neutral and high in organic matter. It is inclined to do poorly on clay that dries and cracks during rainless periods, and is not at all adapted to alkaline soils. It will not endure even a few days of water-logging."
411	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Climbing or smothering growth habit? No] "An evergreen, small, short-trunked, lactiferous sized tree, reaching heights of 10-20 m"
412	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Forms dense thickets? No evidence] "According to Whitmorc [Trop. Rain For. Far East (1975) 237]. the trees are very scattered occurring with a density of 0.2 trees per 40 ha of forest in Ulu Kelantan, Malay Peninsula."
501	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Aquatic? No] Terrestrial Tree
502	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Grass? No] "An evergreen, small, short trunked, lactiferous sized tree, reaching heights of 10 20 m" [Meliaceae]
503	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Nitrogen fixing woody plant? No] Meliaceae
504	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "An evergreen, small, short-trunked, lactiferous sized tree, reaching heights of 10 20 m"
601	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Evidence of substantial reproductive failure in native habitat? No]
602	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Produces viable seed? Yes] "Langsats are commonly grown from seeds which must be planted within 1 or 2 days after removal from the fruit. "

603	2003. Kiew, R./Teo, L.L./Gan, Y.Y.. Assessment of the hybrid status of some Malesian plants using Amplified Fragment Length Polymorphism. Telopea. 10(1): 225–233.	[Hybridizes naturally? Unknown] "Compared with temperate regions where hybrids are common, hybrids reported from the Malesian region are few. In addition, almost none has been the subject of quantitative or experimental study, either because they are rare or inaccessible or are difficult to grow or have long life cycles. Amplified fragment length polymorphism (AFLP) has proved useful in determining whether taxa suggested as hybrids based on their morphological intermediacy between two putative parents are indeed hybrids. The results of AFLP analysis confirmed the hybrid status of taxa in the following genera, Begonia (Begoniaceae), Mangifera (Anacardiaceae) and Nepenthes (Nepenthaceae), while disproving the hybrid status of duku-langsat, Lansium (Meliaceae)."
604	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Self-compatible or apomictic? Yes] "Flowers are perfect and cross-pollination is rare" … "The fruit can develop parthenocarpically and the seed apomictically (Salma and Razali, 1987)."
605	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Requires specialist pollinators? No] "Flowers are perfect and cross-pollination is rare"
606	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Reproduction by vegetative fragmentation? No evidence of natural vegetative spread] "Trees are propagated by budding, cleft and side grafting and from seed, in which case they flower after about 15 years."
607	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Minimum generative time (years)? 12+] "Seedlings will bear in 12 to 20 years."
607	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Minimum generative time (years)? 7+] "Longkong plants propagated from seed, flower and fruit in 7-8 years while those asexually propagated, flower and fruit in 3-5 years."
701	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unlikely, although latex may allow fruits or seeds to adhere to vehicles or shoes] "Fruit 2-4 cm long. I.5-2(-4) cm diam.. Pale yellow or brownish, often becoming glabrous; pericarp sometimes with white latex, white within. Seeds 1-5, the locules with undeveloped seeds filled with arillatc tissue; aril completely enveloping seed, c. 25 mm long, 15 mm wide..."
702	1991. Saw, L.G./LaFrankie, J.V./Kochummen, K.M./Yap, S.K.. Fruit Trees in a Malaysian Rain Forest. Economic Botany. 45(1): 120-136.	[Propagules dispersed intentionally by people? Yes] "Fruit a berry, round or oblong, 2- 5 cm across, ripening yellow; pericarp thin, dry; seed jacket pleasantly astringent to sweet. Widely cultivated in villages and plantations."
703	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Propagules likely to disperse as a produce contaminant? No evidence. Fruits and seeds are relatively large. Not likely to contaminate produce] "Fruit 2-4 cm long. I.5-2(-4) cm diam.. Pale yellow or brownish, often becoming glabrous; pericarp sometimes with white latex, white within. Seeds 1-5, the locules with undeveloped seeds filled with arillatc tissue; aril completely enveloping seed, c. 25 mm long, 15 mm wide..."
704	2012. Lim, T.K.. Edible Medicinal and Non-Medicinal Plants. Volume 3, Fruits. Springer, New York	[Propagules adapted to wind dispersal? No] "Langsat has smaller, usually 2-3 cm diameter, ellipsoid, yellow, think-skinned (2-3 mm) fruits, which do not split but ooze a lot of latex when broken…"
705	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Propagules water dispersed? No evidence] "Fruit 2-4 cm long. I.5-2(-4) cm diam.. Pale yellow or brownish, often becoming glabrous; pericarp sometimes with white latex, white within. Seeds 1-5," … "Fruit said to be dispersed by bats."
706	1989. Becking, J. H.. Diets of Javanese Birds. In Henri Jacob Victor Sody, 1892-1959: His Life and Work. Brill Archive, Leiden, Netherlands	[Propagules bird dispersed? Yes] "Chloropsis cochinchinensis" [The Blue-winged Leafbird consumes the fruit of L. domesticum]
706	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Propagules bird dispersed? Potentially Yes] "Fruit 2-4 cm long. I.5-2(-4) cm diam.. pale yellow or brownish, often becoming glabrous; pericarp sometimes with white latex, white within. Seeds 1-5," … "Fruit said to be dispersed by bats." [Larger gamebirds may be able to consume fruit and disperse seeds]

707	1991. Fujita, M.S./Tuttle, M.D.. Flying Foxes (Chiroptera: Pteropodidae): Threatened Animals of Key Ecological and EconomicImportance. Conservation Biology. 5(4): 455-463.	[Propagules dispersed by other animals (externally)? Possibly carried externally by fruit bats] "In Malaysia and Indonesia growers of rambutan (Nephelium lappa- ceum), langsat (Lansium domesticum), and water ap- ples (Eugenia aquea) admitted that bats presented a problem for only a few days prior to harvest and that these problems could be largely avoided by simple pro- tective measures, such as shining bright lamps or light- ing small fires below fruiting trees."
708	1995. Mabberley, D.J./Pannell, C.M./Sing, A.M.. Flora Malesiana. Series I, Spermatophyta: Flowering plants. Volume 12, part 1. Meliaceae. Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands	[Propagules survive passage through the gut? Presumably Yes] "Fruit said to be dispersed by bats."
708	2000. Kunz, T.H./Jones, D.P.. Pteropus vampyrus. Mammalian Species. 642: 1-6.	[Propagules survive passage through the gut? Possibly Yes] "P. vampyrus feeds on pollen, nectar, and flowers of coconut (C. nucifera) and durian trees (Durio zibethinus); fruits of rambutan (Nephelium lappaceum), fig (Ficus), and langsat (Lansium domesticum) trees"
708	2012. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut?] Feral pigs might be able to consume fruits and spread seeds
801	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Prolific seed production (>1000/m2)? No. Fruit relatively large and with large seeds] "The fruit, borne 2 to 30 in a cluster, is oval, ovoid-oblong or nearly round, 1 to 2 in (2.5 5 cm) in diameter, and has light grayish yellow to pale brownish or pink, velvety skin, leathery, thin or thick, and containing milky latex. There are 5 or 6 segments of aromatic, white, translucent, juicy flesh (arils), acid to subacid in flavor. Seeds, which adhere more or less to the flesh, are usually present in 1 to 3 of the segments. They are green, relatively large–3/4 to 1 in (2-2.5 cm) long and 1/2 to 3/4 in (1.25-2 cm) wide, very bitter, and sometimes, if the flesh clings tightly to the seed, it may acquire some of its bitterness."
801	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Prolific seed production (>1000/m2)? No] "Longkong can be propagated sexually and asexually. However, in 100 fruit only about ten seeds will germinate."
802	1987. Morton, J.F.. Fruits of warm climates - Langsat (Lansium domesticum). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/langsat.html [Accessed 21 Nov 2012]	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Langsats are commonly grown from seeds which must be planted within 1 or 2 days after removal from the fruit. Viability is totally lost in 8 days unless the seeds are stored in polyethylene bags at 39.2º-42.8º F (4º-6º C) where they will remain viable for 14 days."
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown] "Mature plants are pruned after harvest, which is normally at the start of the rainy season when the tree is entering a dormant period."
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Possibly Naturalized
- Thrives in tropical climates
- Peel may be toxic
- Shade tolerant
- Seeds can develop apomictically
- Fruit consumed and seeds dispersed by birds and mammals, including people

Low Risk / Desirable Traits

- Despite potential naturalization, no negative impacts have been documented
- Unarmed (no spines, thorns or burrs)
- Edible fruit
- Medicinal properties
- Long time to reproductive maturity (8+ years)
- Landscaping and ornamental value
- Seeds lose viability quickly (no seed bank)