

Family: Sapindaceae

Taxon: *Dimocarpus longan*

Synonym: *Dimocarpus longan* subsp. *Longan* **Common Name** Dragon's eye
Dimocarpus longan subsp. *Malesianus* longan
Euphoria longan (Lour.) Steudel longanier
Euphoria longana Lam. Longanbaum
isau
mata kucing

Questionnaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** L(Hawai'i)
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score** -2

101	Is the species highly domesticated?	y=-3, n=0	y
102	Has the species become naturalized where grown?	y=1, n=-1	y
103	Does the species have weedy races?	y=1, n=-1	n
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	y
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	
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	n
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens	y=1, n=0	y
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	y=1, n=0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: L(Hawai'i)

WRA Score -2

Supporting Data:

101	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA_PINDACEAE_PAPERS2.pdf	"There is considerable genetic variability in longan cultivars with marked differences in bark characteristics, yielding ability, disease and wind resistance, fruit size, flesh recovery and eating quality, tree size, shape, and canopy density, leaf size, leaf colour and arrangement."
101	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.	"Cultivated since antiquity for its edible fruit, the native home of <i>D. longan</i> is uncertain, though the area encompassing southern China and Southeast Asia seems likely as the original range of its wild progenitor."
102	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 12 (Hippocastanaceae through Theaceae).. Science Press Beijing, and Missouri Botanical Garden Press, St. Louis.,	"Native in Guangdong, Guangxi, Hainan, and Yunnan; widely cultivated in S China [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea (naturalized), Philippines, Sri Lanka, Thailand, Vietnam; cultivated in subtropical regions]." [Dimocarpus longan has become naturalized where grown]
103	2007. Randall, R.P.. Global Compendium of Weeds - <i>Dimocarpus longan</i> [Online Database]. Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/dimocarpus_longan/	Listed as a weed [but no information found on impacts or control]
201	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA_PINDACEAE_PAPERS2.pdf	"The longan originated in China or in the area between Burma and India. Thailand, China and Taiwan are the main centres of commercial production."
201	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.	"the native home of <i>D. longan</i> is uncertain, though the area encompassing southern China and Southeast Asia seems likely as the original range of its wild progenitor."
202	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.	Native range uncertain, but subtropical in origin.
203	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA_PINDACEAE_PAPERS2.pdf	"Longan is a subtropical tree well adapted to tropical climates with distinctive wet/dry periods and subtropical areas with a cool, nonfreezing fall/winter period. Longans are indigenous to lowland and middle elevations. Longans produce more reliably in areas characterized by low non freezing temperatures (15oC or less) and a dry period during the fall and winter (October February). Warm temperatures (21-29oC) during spring, followed by high summer temperatures (27 35oC) and nonlimiting soil moisture are best for fruit development. Warm and rainy winters are conducive to vegetative growth. Excessive rains during flowering cause flower drop and may reduce pollination and fruit set."
204	2002. Jiang, Y./Zhang, Z./Joyce, D.C./Ketsa, S.. Postharvest biology and handling of longan fruit (<i>Dimocarpus longan</i> Lour.). Postharvest Biology and Technology. 26: 241–252.	"Longan (<i>Dimocarpus longan</i> Lour.) is an evergreen tree of the Sapindaceae family. It is indigenous to the foothills of mountainous areas of Northern Burma and Northeast and Southern China (Batten, 1986; Menzel, 1989; Huang, 1995; Bose and Mitra, 1996; Partridge, 1997)."
204	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA_PINDACEAE_PAPERS2.pdf	"The longan originated in China or in the area between Burma and India. Thailand, China and Taiwan are the main centres of commercial production."
205	2002. Jiang, Y./Zhang, Z./Joyce, D.C./Ketsa, S.. Postharvest biology and handling of longan fruit (<i>Dimocarpus longan</i> Lour.). Postharvest Biology and Technology. 26: 241–252.	"Longan fruit is grown commercially in many countries, including China, Thailand, India and Vietnam (Campbell and Malo, 1981; Watson, 1984; Reed, 1986; Crane, 1989; Menzel et al., 1989; Meyer and Motohashi, 1989; Subhadrabandhu, 1992; Wong, 1992; Choo, 1992; Huang, 1995; Bose and Mitra, 1996; Mandal and Mazumdar, 1997; Campbell and Campbell, 2001). The crop is spread widely throughout the tropics (Tongdee, 1997; Nakasone and Paull, 1998; Nicholls, 2001), although China, Thailand and Vietnam account for most of the fruit production."
301	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 12 (Hippocastanaceae through Theaceae).. Science Press Beijing, and Missouri Botanical Garden Press, St. Louis.,	"Native in Guangdong, Guangxi, Hainan, and Yunnan; widely cultivated in S China [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea (naturalized), Philippines, Sri Lanka, Thailand, Vietnam; cultivated in subtropical regions]."

302	2007. Randall, R.P.. Global Compendium of Weeds - <i>Dimocarpus longan</i> [Online Database]. Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/dimocarpus_longan/	No evidence that <i>Dimocarpus longan</i> is a garden, amenity or disturbance weed. [listed as a weed, but no information found on negative impacts or control]
303	2007. Randall, R.P.. Global Compendium of Weeds - <i>Dimocarpus longan</i> [Online Database]. Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/dimocarpus_longan/	No evidence that <i>Dimocarpus longan</i> is an agricultural, forestry or horticultural weed
304	2007. Randall, R.P.. Global Compendium of Weeds - <i>Dimocarpus longan</i> [Online Database]. Hawaii Ecosystems at Risk Project (HEAR), http://www.hear.org/gcw/species/dimocarpus_longan/	No evidence that <i>Dimocarpus longan</i> is an environmental weed
305	2007. Randall, R.P.. Global Compendium of Weeds. http://www.hear.org/gcw/	No other <i>Dimocarpus</i> species documented as weeds.
401	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.	No spines, thorns or burrs
402	2010. WRA Specialist. Personal Communication.	No evidence of allelopathy
403	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.	"Tree 30-40' tall" [not parasitic]
404	2010. Roy, K./Singh, M./Sushma, H.S./Singh, M.. Stand structure of a primate rich rainforest region in the central Western Ghats of southern India. <i>Journal of Threatened Taxa</i> . 2(6): 930-939.	"Table 4. Common fodder plants used by different species-pairs" [lists <i>Dimocarpus longan</i> as a fodder plant for several primate species in India...Hanuman Langur & Lion-tailed Macaque Hanuman Langur & Bonnet Macaque Lion-tailed Macaque & Bonnet Macaque]
405	2008. National Geographic. Edible: An Illustrated Guide to the World's Food Plants. National Geographic Books, Washington, D.C.	No evidence of toxicity in species
405	2010. WRA Specialist. Personal Communication.	No evidence of toxicity to animals reported
406	2002. Jiang, Y./Zhang, Z./Joyce, D.C./Ketsa, S.. Postharvest biology and handling of longan fruit (<i>Dimocarpus longan</i> Lour.). <i>Postharvest Biology and Technology</i> . 26: 241-252.	"The longan fruit is a fruit fly host. Hawaiian longans host <i>Ceratitis capitata</i> Wied., the Mediterranean fruit fly <i>Liquido</i> , 1990. In China, <i>Conopomorpha litchiella</i> , <i>Conopomorpha sinensis</i> , <i>Cornegenapsylla sinica</i> , <i>Tessaratoma papillosa</i> , <i>C. litchiella</i> and <i>T. papillosa</i> have been identified as major insect pests (Zhang, 1999; Zhan et al., 2001), causing visible external damage. Longan witch-broom disease is commonly associated with litchi stinkbug (<i>T. papillosa</i>) (Chen et al., 1999; Zhang, 1999; Chen and Xu, 2001). Chou et al. (1999) have identified two aphids, <i>Cervaphis quercus</i> and <i>Greenidea mangiferae</i> , as pests of longan in Taiwan. Fruit-piercing moth is also a problem with thin-skinned cultivars such as 'Tuzhong'. Gould et al. (1999) reported that 'Kohala' fruit grown in Florida does not host the Caribbean fruit fly."

406	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA/PINDACEAE_PAPERS2.pdf	"Longan is relatively free of pests, compared with lychees, but a number of insect pests do attack the crop. The most common pests are the lychee webworm and several scale insects. The lychee webworm (<i>Crocidosema</i> new species) attacks emerging shoots and panicles, flowers and young fruit and if left uncontrolled drastically reduces fruit set and crop yields. Scales include the banana shaped (<i>Coccus acutissimus</i>) and barnacle (<i>Ceroplastes</i> spp.) scales, which attack mostly the underside of leaves and the philephedra scale (<i>Phillephedra tuberculosa</i>) that attacks leaves and fruit. Adult citrus blue-green weevil (<i>Pachnaeus litus</i>), little leaf notcher (<i>Artipus floridanus</i>) and diaprepes weevil (<i>Diaprepes abbreviatus</i>) have been observed to feed on leaves and their larvae feed on roots. Fortunately, effective control measures are available for all but the last two pests. Early harvesting of the fruit is the only practical method of limiting the damage from these two pests. There are no major diseases limiting longan production. Weeds can reduce tree growth and need to be controlled with herbicides such as paraquat and glyphosate. There are no major disease problems of longan at the present time. Red alga (<i>Cephaleuros virescens</i>) attacks limbs and shoots and is most prevalent during high humidity, warm, rainy weather. Symptoms include dark gray to reddish-rust colored patches or spots on bark and/or leaves. In severe infections, leaf drop and stem die back occur. Parasitic lichen (<i>Strigula</i> sp.) may attack leaves. Symptoms include white star-shaped spots on leaf surfaces. This lichen colonizes leaves reducing their ability to nurture the tree. Weeds can reduce tree growth and need to be controlled with herbicides such as paraquat and glyphosate."
407	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA/PINDACEAE_PAPERS2.pdf	"Longans are much eaten fresh, out-of hand, but some have maintained that the fruit is improved by cooking. In China, the majority are canned in sirup or dried. For drying, the fruits are first heated to shrink the flesh and facilitate peeling of the rind. Then the seeds are removed and the flesh dried over a slow fire. The dried product is black, leathery and smoky in flavor and is mainly used to prepare an infusion drunk for refreshment. A liqueur is made by macerating the longan flesh in alcohol." [fruit tree with no evidence of toxicity]
407	2008. National Geographic. Edible: An Illustrated Guide to the World's Food Plants. National Geographic Books, Washington, D.C.	No evidence of toxicity to humans reported
408	2010. World Agroforestry Center. Agroforestry Tree Database - <i>Dimocarpus longan</i> . http://www.worldagroforestry.org/Sea/Products/AFDBases/AF/asp/SpeciesInfo.asp?SplD=17976	"The longan is native to southern China, in the provinces of Kwangtung, Kwangsi, Schezwan and Fukien, between elevations of 150-450 m. It thrives much better on higher ground than the lychee and endures more frost. It is rarely found growing along the dykes of streams as is the lychee but does especially well on high ground near ponds. The longan appears in these regions more often but it, too, cannot stand heavy frosts. After a long period of cool weather over the 3 winter months, with no frost, longan trees bloom well. Blooming is poor after a warm winter." [no evidence that species increases fire risk or is otherwise a fire adapted or fire prone species]
409	2003. Llamas, K. A.. Tropical Flowering Plants. Timber Press, Portland, OR	Full sun
409	2004. Food and Agriculture Organization of the United Nations. Fruits of Vietnam. FAO, http://www.fao.org/docrep/008/ad523e/ad523e00.htm	"The tree cannot tolerate drought (as lychee does), but can tolerate shady conditions."
409	2010. Dave's Garden. PlantFiles: Longan, Lungan, Dragon's Eye, Cat's Eye (<i>Dimocarpus longan</i>). Dave's Garden, http://davesgarden.com/guides/pf/go/55444/	Sun Exposure: Sun to Partial Shade
410	. Morton, J.. Fruits of warm climates - Longan (<i>Dimocarpus longan</i>). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/longan.html	"The longan thrives best on a rich sandy loam and nearly as well on moderately acid, somewhat organic, sand. It also grows to a large size and bears heavily in oolitic limestone. In organic muck soils, blooming and fruiting are deficient."
410	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA/PINDACEAE_PAPERS2.pdf	"Longan trees thrive on various soil types provided they are well drained. They do well on alluvial soils, sandy loams, sand and calcareous, rocky soils."
411	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.	"Tree 30-40' tall" [not climbing or smothering]

412	2010. WRA Specialist. Personal Communication.	Growth habit unlikely to impede movement, and no evidence that tree forms dense thickets in native or introduced range.
501	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.	Terrestrial
502	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.	Sapindaceae
503	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.	Sapindaceae [not nitrogen fixing]
504	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.	"Tree 30-40' tall" [not a geophyte]
601	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 12 (Hippocastanaceae through Theaceae).. Science Press Beijing, and Missouri Botanical Garden Press, St. Louis.,	No evidence of substantial reproductive failure in native habitat
602	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.	"Trees may be grown from seed or reproduced by air layering, patch budding, or grafting"
603	1994. McConchie, C.A./Vithanage, V./Batten, D.J.. Intergeneric Hybridisation between Litchi (<i>Litchi chinensis</i> Sonn.) and Longan (<i>Dimocarpus longan</i> Lour.). <i>Annals of Botany</i> . 74(2): 111-118.	"Intergeneric hybrids have been reported to occur naturally in China and are referred to as lungly (Groff, 1921). There have been no detailed investigations to determine if these trees were true hybrids or represent morphological diversity of these species." [able to form hybrids in cultivation, but ability to naturally hybridize unknown]
604	2006. Blanche, K.R./Ludwig, J.A./Cunningham, S.A.. Proximity to rainforest enhances pollination and fruit set in orchards. <i>Journal of Applied Ecology</i> . 43: 1182-1187.	"We established for the first time that pollen transfer in longan is by a combination of autogamous self-pollination, wind and bees. Longan flowers were visited by stingless bees and honeybees but only stingless bees had a positive relationship with initial longan fruit set and higher visitation rates near rainforest than far from rainforest. This suggests that enhanced pollination in longan near rainforest resulted primarily from a more abundant supply of stingless bees from the rainforest...Our study is the first to document that autogamous self-pollination, wind and insects can all contribute to longan pollination but that insects are the main pollen vectors in longan orchards."
605	2006. Blanche, K.R./Ludwig, J.A./Cunningham, S.A.. Proximity to rainforest enhances pollination and fruit set in orchards. <i>Journal of Applied Ecology</i> . 43: 1182-1187.	"We established for the first time that pollen transfer in longan is by a combination of autogamous self-pollination, wind and bees. Longan flowers were visited by stingless bees and honeybees but only stingless bees had a positive relationship with initial longan fruit set and higher visitation rates near rainforest than far from rainforest. This suggests that enhanced pollination in longan near rainforest resulted primarily from a more abundant supply of stingless bees from the rainforest." [does not require specialist pollinators]
606	. Morton, J.. Fruits of warm climates - Longan (<i>Dimocarpus longan</i>). J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/longan.html	"Most longan trees have been grown from seed." [no evidence that Longan reproduces by vegetative fragmentation]
607	2003. Janssens, M./Pohlan, J.. Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics. Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SAPINDACEAE_PAPERS2.pdf	"Germination takes place within a week or 10 days. The seedlings are transplanted to shaded nursery rows the following spring and set in the field 2-3 years later during winter dormancy...In newly established orchards young trees should be grown as vigorously as possible for the first four years to attain the greatest tree size and bearing surface...After four years, the application of nitrogen should cease until the first crop is picked."
701	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 12 (Hippocastanaceae through Theaceae).. Science Press Beijing, and Missouri Botanical Garden Press, St. Louis.,	"Fruit usually yellowish brown or sometimes grayish yellow, subglobose, 1.2-2.5 cm in diam., abaxially slightly rugose, or with few slightly prominent tubercles. Seeds brown, nitid, with fleshy arilode." [fairly large fruits/seeds with no means of external attachment and no evidence of unintentional dispersal]

702	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.	Cultivated for edible fruit and as an ornamental
703	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 12 (Hippocastanaceae through Theaceae).. Science Press Beijing, and Missouri Botanical Garden Press, St. Louis.,	"Fruit usually yellowish brown or sometimes grayish yellow, subglobose, 1.2–2.5 cm in diam., abaxially slightly rugose, or with few slightly prominent tubercles. Seeds brown, nitid, with fleshy arillode." [large seeds, unlikely to contaminate other produce]
704	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.	"Fruit globose, 0.5-1" [not adapted for wind dispersal]
705	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 12 (Hippocastanaceae through Theaceae).. Science Press Beijing, and Missouri Botanical Garden Press, St. Louis.,	"Fruit usually yellowish brown or sometimes grayish yellow, subglobose, 1.2–2.5 cm in diam., abaxially slightly rugose, or with few slightly prominent tubercles. Seeds brown, nitid, with fleshy arillode." [no adaptation for water dispersal, and natural distribution suggests seeds are not water dispersed]
706	2005. Crane, J.H./Balerdi, C.F./Sargent, S.A./Maguire, I.. Longan Growing in the Florida Home Landscape - Fact Sheet HS-49. Institute of Food and Agricultural Sciences, University of Florida, http://edis.ifas.ufl.edu/pdf/FILES/MG/MG04900.pdf	"Birds such as boat-tailed crackles (<i>Cassidix mexicanus</i>) and monk parakeets (<i>Myiopsitta monachus</i>) may feed on the fruit. Bagging the fruit in paper bags and netting may be used to exclude these birds if they become a major problem." [although seeds are large, fleshy fruits could potentially be dispersed by birds]
707	2010. Mudappa, D./Kumar, A./Chellam, R.. Diet and fruit choice of the brown palm civet <i>Paradoxurus jerdoni</i> , a viverrid endemic to the Western Ghats rainforest, India. <i>Tropical Conservation Science</i> . 3 (3): 282-300.	"Fruit usually yellowish brown or sometimes grayish yellow, subglobose, 1.2–2.5 cm in diam., abaxially slightly rugose, or with few slightly prominent tubercles. Seeds brown, nitid, with fleshy arillode." [no means of external attachment, or evidence that propagules are dispersed externally by animals]
708	2010. Hu, Y-H./Tang, Z-H./Cao, M./Ma X-F.. The Feeding Behavior and Food Intake of <i>Rousettus leschenaultii</i> on <i>Dimocarpus longan</i> . <i>Chinese Journal of Zoology</i> . 03: .	" <i>Rousettus leschenaultii</i> is a common fruit eating bat in Xishuangbanna, Southwest China. Its feeding behavior was observed in the field and its food intake on fruit of <i>Dimocarpus longan</i> was estimated in the laboratory. <i>R. leschenaultii</i> usually caught fruits from one tree and took the food to another species of trees to consume them in the study area. During the period of the research, we did not observe the bat consuming the fruit of <i>D. longan</i> where they got them. There were three foraging peaks at 20:30 - 21:00, 22:00 - 22:30 and 1:00 - 1:30 in the night from 19:30 to 5:30 next morning. . We fed the 10 bats with the fruits of <i>D. longan</i> and found that each bat consumed 6 to 20 fruits of <i>D. longan</i> depending on their body weight. The quantity of food took by each bat in one night was as weight as 1 - 1. 8 times of its body mass." [abstract, no indication if seeds are consumed and passed through gut]
708	2010. Mudappa, D./Kumar, A./Chellam, R.. Diet and fruit choice of the brown palm civet <i>Paradoxurus jerdoni</i> , a viverrid endemic to the Western Ghats rainforest, India. <i>Tropical Conservation Science</i> . 3 (3): 282-300.	Appendix 1. The percent occurrence of seeds and other remains in scats (percentage of items, Fi) of the brown palm civet in the tropical rainforest of Kalakad-Mundanthurai Tiger Reserve, 1996–1999 (number of scats in parentheses)... <i>Dimocarpus longan</i> *...*Seeds of these species were found intact in scats and observed to germinate after ingestion by brown palm civets"
801	2003. Janssens, M./Pohlan, J.. <i>Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics</i> . Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA_PINDACEAE_PAPERS2.pdf	"The main problems experienced in commercial orchards have been irregular flowering, biennial bearing and small fruit. Trees tend to overcrop some years and this is followed by a light crop the next year."
802	. Morton, J.. <i>Fruits of warm climates - Longan (Dimocarpus longan)</i> . J.F. Morton, Miami, FL http://www.hort.purdue.edu/newcrop/morton/longan.html	"Most longan trees have been grown from seed. The seeds lose viability quickly. After drying in the shade for 4 day, they should be planted without delay, but no more than 3/4 in (2 cm) deep, otherwise they may send up more than one sprout. Germination takes place within a week or 10 days."
802	2003. Janssens, M./Pohlan, J.. <i>Tropical Crops: Agricultural Science and Resource Management in the Tropics and Subtropics</i> . Fruit and Industry Crops Pts 140. http://www.tropen.uni-bonn.de/new_website/englische_seiten/Study/SA_PINDACEAE_PAPERS2.pdf	"Most longan trees have been grown from seed. The seeds lose viability quickly."
803	2010. WRA Specialist. Personal Communication.	Unknown [No information found on control of this species with herbicides]
804	2010. WRA Specialist. Personal Communication.	Unknown [no information found on the effects of mutilation, cultivation or fire]

