

Family: *Ochnaceae*

Taxon: *Ochna integerrima*

Synonym: *Elaeocarpus integerrimus* Lour.
Ochna harmandii Lecomte

Common Name: jin lian mu
Vietnamese mickey-mouse plant

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	EVALUATE
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score	1
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		y
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0		y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0		n
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205		n
302	Garden/amenity/disturbance weed		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)		y
401	Produces spines, thorns or burrs		y=1, n=0		n
402	Allelopathic		y=1, n=0		
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		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		
411	Climbing or smothering growth habit		y=1, n=0		n

412	Forms dense thickets	y=1, n=0	
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	
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	
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	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: EVALUATE

WRA Score **1**

Supporting Data:

101	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.,	[Is the species highly domesticated? No evidence]
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	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.,	[Species suited to tropical or subtropical climate(s) 2-High] "Rocky valley sides, wet areas by streams; 300–1400 m. SW Guangdong, Guangxi, Hainan [Cambodia, India, Laos, Malaysia, Myanmar, Pakistan, Thailand, Vietnam]."
202	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.,	[Quality of climate match data 2-High]
203	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.,	[Broad climate suitability (environmental versatility)? Yes] "Rocky valley sides, wet areas by streams; 300–1400 m." [Environmental versatility - elevation range exceeds 1000 m]
204	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 or naturalized in regions with tropical or subtropical climates? Yes] "Rocky valley sides, wet areas by streams; 300–1400 m. SW Guangdong, Guangxi, Hainan [Cambodia, India, Laos, Malaysia, Myanmar, Pakistan, Thailand, Vietnam]."
205	2005. Imada, C.T./Staples, G.W./Herbst, D.R.. Annotated Checklist of Cultivated Plants of Hawai'i. The Bishop Museum, http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/	[Does the species have a history of repeated introductions outside its natural range? Oahu, HI] "Locations: Ho'omaluhia Botanical Garden"
205	2012. Dave's Gardern. PlantFiles: Vietnamese Mickey Mouse Plant - <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. http://davesgarden.com/guides/pf/go/138265/	[Does the species have a history of repeated introductions outside its natural range? LA and HI] "This plant has been said to grow in the following regions: Pepeekeo, Hawaii Estelle, Louisiana"
301	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Naturalized beyond native range? No evidence]
301	2012. Wagner, W.L./Herbst, D.R./Khan, N./Flynn, T.. Hawaiian Vascular Plant Updates: A Supplement to the Manual of the Flowering Plants of Hawai'i & Hawai'i's Ferns & Fern Allies. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/supplement.htm	[Naturalized beyond native range? No evidence] <i>Ochna serrulata</i> and <i>Ochna thomasiana</i> are reported to be naturalized in the Hawaiian Islands. No evidence of <i>Ochna integerrima</i>
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	2006. Gosper, C.R./Vivian-Smith, G./Hoad, K.. Reproductive ecology of invasive <i>Ochna serrulata</i> (Ochnaceae) in south-eastern Queensland. Australian Journal of Botany. 54(1): 43-52.	[Congeneric weed? Yes] "In Australia, <i>O. serrulata</i> has invaded rainforests, dry sclerophyll forests and riparian vegetation in coastal districts from Sydney to south-eastern Queensland (Williams et al. 1984; Csurhes and Edwards 1998), where it can dominate the shrub layer."
401	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.,	[Produces spines, thorns or burrs? No] "Small trees or shrubs, 2–7 m tall, 6–16 cm d.b.h., deciduous. Branchlets gray-brown, glabrous. Stipules 2–7 mm, soon deciduous; petiole 2–5 mm; leaf blade elliptical, obovate-oblong, or obovate-lanceolate, 7–19 × 3–5.5 cm, base broadly cuneate, margin serrate, apex acute or obtuse; midvein prominent on both surfaces. Inflorescence corymbose, ca. 4 cm, on short branchlets."

402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown] No evidence suggested in literature
403	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.,	[Parasitic? No] "Small trees or shrubs, 2–7 m tall, 6–16 cm d.b.h., deciduous." [Ochnaceae]
404	1980. Le Houérou, H.N. (ed). Browse in Africa: The Current State of Knowledge : Papers Presented at the International Symposium on Browse in Africa, Addis Ababa, April 8-12, 1980, and Other Submissions. ILRI, Addis Ababa	[Unpalatable to grazing animals? Unknown. Other Ochna species are palatable] "Table 1. Some Browse Plants in Tropical Africa" [List includes Ochna afzelli, O. inermis and O. schweinfurthiana] ... "Acacia tortilis, Grewia kakothamnus and Ochna stuhlmannii were found to be 'extremely palatable'."
404	1980. Zimmermann, I.. Factors Influencing the Feed Intake and Liveweight Change of Beef Cattle on a Mixed TreeSavanna in the Transvaal. Journal of Range Management. 33(2): 132-136.	[Unpalatable to grazing animals? Unknown. Other Ochna species are palatable] "In October the steers did a lot of browsing on the newly flushed leaves of the peeling bark of ochna (Ochna pulchra), which made up roughly 20% of the dry weight of their food consumption at this time; the fistula samples which contained some of these browse leaves had much higher CP contents than the other samples collected in October (Zimmermann 1978)."
404	1987. Owen-Smith, N./Cooper, S.M.. Palatability of Woody Plants to Browsing Ruminants in a South African Savanna. Ecology. 68(2): 319-331.	[Unpalatable to grazing animals? Unknown. Other Ochna species are palatable] "Eland in Waterberg Plateau Park of Namibia ate Burkea africana and Ochna pulchra only when new leaves emerged, while Dombeya rotundifolia was eaten in the dry season only."
405	2012. WRA Specialist. Personal Communication.	[Toxic to animals? Unknown] Other members of the genus are palatable to animals (foliage and fruit) with no reports of poisoning or toxicity
406	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	[Host for recognized pests and pathogens? Unknown] "Pests include scales, thrips, and mealybugs, for which commercial insecticides may be applied." [Generic description]
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No evidence of toxicity in Ochna genus]
407	2012. WRA Specialist. Personal Communication.	[Causes allergies or is otherwise toxic to humans? No evidence] Unlikely, as several species in the genus are widely cultivated and well-known, yet there is no mention in the literature of anyone suffering from an allergic reaction or inadvertent poisoning.
408	2007. Johnson, L.A.. Fire, seasonally dry evergreen forest and conservation, Huai Kha Khaeng Wildlife Sanctuary, Thailand. PhD Dissertation. University of Victoria, Victoria, CA	[Creates a fire hazard in natural ecosystems? Probably No. Fire-resistant] "DDFopen are as described earlier except that the forest canopy is open. The savannas of these areas are dominated by grasses, with some trees encountered so that sometimes the canopy may be only 10% complete. Trees species associated with the savanna type include Careya arborea, Acacia siamensis, Acacia catechu, Pterocarpus macrocarpus and Ochna integerrima, all of which are highly fire resistant species."
409	1977. Smitinand, T.. A Preliminary Study of the Vegetation of Surin Islands. Natural History Bulletin of the Siam Society. 26: 227-24.	[Is a shade tolerant plant at some stage of its life cycle? Presumably Yes] "Beach forest. Along the sandy beaches a strand flora is formed by Hernandia nymphaefolia, ... "Among the undergrowth are shrubs such as : Salacia oblongifolia, S. verrucosa, Ochna integerrima, Grewia umbellata, Wrightia cambodiensis, Olea maritima, Schefflera sp., Crinum sp., and Pandanus sp." [Occurs in understory of multi-tiered forest, presumably shade tolerant]
409	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	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Ochnas are mostly understory shrubs in the wild, unexposed to intense sunlight or strong winds, so some protection from the elements is necessary to prevent a weather-beaten look."
410	2012. Dave's Gardern. PlantFiles: Vietnamese Mickey Mouse Plant - Ochna integerrima [Accessed 27 Aug 2012]. http://davesgarden.com/guides/pt/go/138265/	[Tolerates a wide range of soil conditions? Possibly No. Does not tolerate basic soils] "Soil pH requirements: 5.6 to 6.0 (acidic) 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
411	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.,	[Climbing or smothering growth habit? No] "Small trees or shrubs, 2–7 m tall, 6–16 cm d.b.h., deciduous."
412	2012. WRA Specialist. Personal Communication.	[Forms dense thickets? Unknown]

501	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.,	[Aquatic? No] "Rocky valley sides, wet areas by streams; 300–1400 m."
502	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.,	[Grass? No] "Small trees or shrubs, 2–7 m tall, 6–16 cm d.b.h., deciduous." [Ochnaceae]
503	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.,	[Nitrogen fixing woody plant? No] Ochnaceae
504	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.,	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Small trees or shrubs, 2–7 m tall, 6–16 cm d.b.h., deciduous. Branchlets gray-brown, glabrous. Stipules 2–7 mm, soon deciduous; petiole 2–5 mm; leaf blade elliptical, obovate-oblong, or obovate-lanceolate, 7–19 × 3–5.5 cm, base broadly cuneate, margin serrate, apex acute or obtuse; midvein prominent on both surfaces."
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.,	[Evidence of substantial reproductive failure in native habitat? No evidence]
601	2012. Biodiversity Informatics & co-Operation in Taxonomy for Interactive shared Knowledge bas (BIOTIK). <i>Ochna integerrima</i> (Lour.) Merr. - Ochnaceae [Accessed 27 Aug 2012]. http://www.biotik.org/laos/species/o/ochin/ochin_en.html	[Evidence of substantial reproductive failure in native habitat? No evidence] "Common in semi-open areas with pine or dipterocarps, but also in evergreen forest."
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	[Produces viable seed? Yes] "Propagation is usually from seed, although cuttings of young stems from partially hardened wood may be successful."
602	2012. Top Tropicals. <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. Top Tropicals Botanical Garden, https://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=Ochna_integerrima	[Produces viable seed? Yes] "In winter the plant is covered with pretty bright yellow flowers, believed to bring good luck and prosperity. They are followed by cute shiny black berries on bright red sepals that resemble the face of Mickey Mouse. The plant is easy to grow and relatively cold hardy (to light freeze)."
603	2012. Top Tropicals. <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. Top Tropicals Botanical Garden, https://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=Ochna_integerrima	[Hybridizes naturally? Unknown] "Hybrid variety <i>Ochna Alba</i> (Vietnamese name 'Bach Mai' meaning literally 'White <i>Ochna</i> ') is very rare and does not produce seeds." [Suggests hybridization is possible within genus]
604	1940. East, E.M.. The distribution of self-sterility in the flowering plants. Proceedings of the American Philosophical Society. 82: 449-518.	[Self-compatible or apomictic? Unknown. Possible] "Now, how many cases of self-fertility are known in this sub- order? In the Dilleniaceae, there are several species of <i>Hibbertia</i> , <i>Dillenia</i> , and <i>Actinidia</i> ; in the Eucryphiaceae, there is one species of <i>Eucryphia</i> ; in the Ochnaceae, there are several species of <i>Ochna</i> and <i>Oureatea</i> "
604	2012. Biodiversity Informatics & co-Operation in Taxonomy for Interactive shared Knowledge bas (BIOTIK). <i>Ochna integerrima</i> (Lour.) Merr. - Ochnaceae [Accessed 27 Aug 2012]. http://www.biotik.org/laos/species/o/ochin/ochin_en.html	[Self-compatible or apomictic? Unknown] "Flowers yellow, arranged in a few-flowered inflorescence, axillary on leafless twigs, bisexual, pedicels longer than 0.5 cm."
605	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.,	[Requires specialist pollinators] "Inflorescence corymbose, ca. 4 cm, on short branchlets. Flowers ca. 3 cm in diam., on 1.5–3 cm pedicels. Sepals oblong, 1–1.4 cm, apex obtuse, reflexed during anthesis, red in fruit. Petals 5(or 7), ovate, 1.3–2 cm, apex obtuse or rounded. Stamens 3-whorled, 0.9–1.2 cm; filaments 5–8 mm. Ovary 10–12-locular; style terete; stigma slightly lobed."
605	2012. Dave's Gardern. PlantFiles: Vietnamese Mickey Mouse Plant - <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. http://davesgarden.com/guides/pf/go/138265/	[Requires specialist pollinators? No evidence] "This plant is attractive to bees, butterflies and/or birds"

606	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	[Reproduction by vegetative fragmentation? No evidence] "Propagation is usually from seed, although cuttings of young stems from partially hardened wood may be successful."
606	2012. Dave's Garden. PlantFiles: Vietnamese Mickey Mouse Plant - <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. http://davesgarden.com/guides/pf/go/138265/	[Reproduction by vegetative fragmentation? No evidence] "Propagation Methods: From seed"
607	2007. iVillage Garden Web. Tropicals Forum - <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. http://forums.gardenweb.com/forums/load/tropical/msg0510110816275.html	[Minimum generative time (years)? 4+] "It may flower after about 5 years, about 3-4 feet at that time in its native land when the trunk is about 1/2-3/4" size." ... "Yes, the plant does grow very slowly. Mine is flowering now but my first one also took 8 years due to lack of experience!! It will flower in about 3 years with care. "
607	2012. Top Tropicals. <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. Top Tropicals Botanical Garden, https://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=Ochna_integerrima	[Minimum generative time (years)? Unknown. Slow-growing] "The most celebrated flower in Vietnam, <i>Ochna integerrima</i> blooms profusely on the occasion of 'Tet', the Vietnamese New Year. A must for exotic plant collection, this is a rather slow growing, medium size shrub that can be trained into miniature tree."
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.,	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No evidence] "Drupelets 3–10(or 15), black, inserted on accrescent receptacle. Seed non-endospermic; embryo straight or curved." ... "Drupes 10–12 × 6–7 mm, base slightly curved, apex obtuse." [No, as fruits are large and conspicuous. Plants are generally planted in landscaping not in highly trafficked areas.]
702	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.,	[Propagules dispersed intentionally by people? Yes. Ornamental and medicinal] "This species is found mainly in deciduous forests in SE Asia. The root can be used as a cathartic for treating worms and as a medicine for treating lymphatic disorders. It is also grown for decorative purposes."
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.,	[Propagules likely to disperse as a produce contaminant? No] "Drupelets 3–10(or 15), black, inserted on accrescent receptacle. Seed non endospermic; embryo straight or curved." ... "Drupes 10–12 × 6–7 mm, base slightly curved, apex obtuse." [No, as fruits are large and conspicuous. Plants are generally planted in landscaping and unlikely to become a contaminant of produce]
704	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.,	[Propagules adapted to wind dispersal? No] "Drupelets 3–10(or 15), black, inserted on accrescent receptacle. Seed non-endospermic; embryo straight or curved." ... "Drupes 10–12 × 6–7 mm, base slightly curved, apex obtuse." [No adaptations 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.,	[Propagules water dispersed? Potentially Yes] "Rocky valley sides, wet areas by streams; 300–1400 m." [Streamside distribution suggests water may be a dispersal vector]
706	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	[Propagules bird dispersed? Yes] " <i>Ochna</i> is distinctive for its colorful fruit, formed from the enlarged, fleshy, colored receptacle and persistent colorful sepals, which set off the contrastingly colored drupes. In the wild this oily, protein-rich fruit is eaten by birds, which then disperse the seeds. The same is true in the Hawaiian Islands, where non-native fruit-eating birds are dispersing the seeds from cultivated <i>ochnas</i> , which are becoming weedy in urban and suburban settings. In 1998, <i>ochnas</i> were first reported as naturalized elements in the Hawaiian flora."
706	2006. Gosper, C.R./Vivian-Smith, G./Hoad, K.. Reproductive ecology of invasive <i>Ochna serrulata</i> (Ochnaceae) in south-eastern Queensland. Australian Journal of Botany. 54(1): 43-52.	[Propagules bird dispersed? Yes. Related species bird-dispersed] " <i>O. serrulata</i> drupes were similar in size to fleshy fruits of other local invasive plants, but showed some distinct differences in quality, with a very high pulp lipid content (32.8% of dry weight), and little sugar and water. Seeds were dispersed by figbirds, <i>Sphecotheres viridis</i> Vieillot, a locally abundant frugivore, and comprised between 10 and 50% of all non <i>Ficus</i> spp. fruit consumed during October and November. The rate of removal of <i>O. serrulata</i> drupes was greater in bushland than suburban habitats, indicating that control in bushland habitats should be a priority, but also that suburban habitats are likely to act as significant seed sources for reinvasion of bushland. Germination occurred under all seed-processing treatments (with and without pulp, and figbird gut passage), suggesting that although frugivores are important for dispersal, they are not essential for germination."
706	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.,	[Propagules bird dispersed? Presumably Yes] "Drupelets 3–10(or 15), black, inserted on accrescent receptacle. Seed non-endospermic; embryo straight or curved." ... "Drupes 10–12 × 6–7 mm, base slightly curved, apex obtuse."

707	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.,	[Propagules dispersed by other animals (externally)? Unlikely] "Drupelets 3–10(or 15), black, inserted on accrescent receptacle. Seed non endospermic; embryo straight or curved." ... "Drupes 10–12 × 6–7 mm, base slightly curved, apex obtuse." [No means of external attachment]
708	2006. Gosper, C.R./Vivian-Smith, G./Hoad, K.. Reproductive ecology of invasive <i>Ochna serrulata</i> (Ochnaceae) in south-eastern Queensland. Australian Journal of Botany. 54(1): 43-52.	[Propagules survive passage through the gut? Yes. Similar to related species] " <i>O. serrulata</i> drupes were similar in size to fleshy fruits of other local invasive plants, but showed some distinct differences in quality, with a very high pulp lipid content (32.8% of dry weight), and little sugar and water. Seeds were dispersed by figbirds, <i>Sphecotheres viridis</i> Vieillot, a locally abundant frugivore, and comprised between 10 and 50% of all non <i>Ficus</i> spp. fruit consumed during October and November. The rate of removal of <i>O. serrulata</i> drupes was greater in bushland than suburban habitats, indicating that control in bushland habitats should be a priority, but also that suburban habitats are likely to act as significant seed sources for reinvasion of bushland. Germination occurred under all seed-processing treatments (with and without pulp, and figbird gut passage), suggesting that although frugivores are important for dispersal, they are not essential for germination."
708	2012. Top Tropicals. <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. Top Tropicals Botanical Garden, https://toptropicals.com/cgi-bin/garden_catalog/cat.cgi?uid=Ochna_integerrima	[Propagules survive passage through the gut? Presumably Yes, if bird-dispersed] "Drupelets 3–10(or 15), black, inserted on accrescent receptacle. Seed non-endospermic; embryo straight or curved." ... "Drupes 10–12 × 6–7 mm, base slightly curved, apex obtuse."
801	2012. Biodiversity Informatics & co-Operation in Taxonomy for Interactive shared Knowledge bas (BIOTIK). <i>Ochna integerrima</i> (Lour.) Merr. - Ochnaceae [Accessed 27 Aug 2012]. http://www.biotik.org/laos/species/o/ochin/ochin_en.html	[Prolific seed production (>1000/m ²)? No] "Flowers yellow, arranged in a few-flowered inflorescence, axillary on leafless twigs, bisexual, pedicels longer than 0.5 cm." ... "Fruits : Fruits up to 1.1 cm, black sitting on enlarge red torus with reflexed red sepals. Seeds : Seed 1." [Unlikely. Single-seed fruits with relatively large seeds]
802	2006. Gosper, C.R./Vivian-Smith, G./Hoad, K.. Reproductive ecology of invasive <i>Ochna serrulata</i> (Ochnaceae) in south-eastern Queensland. Australian Journal of Botany. 54(1): 43-52.	[Evidence that a persistent propagule bank is formed (>1 yr)? Probably No. Related invasive species does not have a persistent seed bank] "Seed persistence was low, particularly under field conditions, with 0.75% seed viability after 6 months and 0% at 12 months." ... " <i>Ochna serrulata</i> appears to have a non-persistent seed bank with no germinable seeds remaining after 6 months and no viable seeds present at 12 months under either field or irrigated tunnel conditions."
802	2007. iVillage Garden Web. Tropicals Forum - <i>Ochna integerrima</i> [Accessed 27 Aug 2012]. http://forums.gardenweb.com/forums/load/tropical/msg0510110816275.html	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "The seeds must be planted within days after it ripens and readily falls of the flower. Beyond that time period, it is no longer viable. I have a tree here and saplings sprout up like crazy as the seeds drop from the flower. I've tried saving the seeds which never grow when brought out much later."
803	2004. Breaden, R./Armstrong, T.. Control methods for <i>ochna</i> (<i>Ochna serrulata</i>) (Hochst.) Walp. in south-east Queensland. Plant Protection Quarterly. 19(1): 33-35.	[Well controlled by herbicides? Yes for related species <i>O. serrulata</i>] "The most effective herbicide tested was fluroxypyr. All treatments containing fluroxypyr were effective in killing <i>ochna</i> , between 10 and 18 months after application. The two mechanical treatments (removal of seedlings and adult crowns) were also very effective. However these were time consuming and would only be appropriate for scattered plants or light infestations."
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Probably Yes] <i>Ochna serrulata</i> (a conspecific) can be controlled using herbicides suggesting similar techniques may be successful with <i>O. inegerrima</i>
804	2005. Thomson, V.P./Leishman, M.R.. Post-fire vegetation dynamics in nutrient-enriched and non-enriched sclerophyll woodland. Austral Ecology. 30: 250-260.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Possibly Yes] "Table 8. The most common native and exotic species with resprouting individuals and individuals growing from seed (all sites combined)" [Resprouting species (%) includes <i>Ochna serrulata</i> . Tolerant of fires]
804	2012. Lane Cove Council. Our Environment » <i>Ochna Serrulata</i> - Mickey Mouse plant [Accessed 27 Aug 2012]. http://www.lanecove.nsw.gov.au/our%20environment/natural%20environment/noxious%20weeds/noxiousweeddescription-ochnaserrulata.htm	[Tolerates, or benefits from, mutilation, cultivation, or fire? Possibly Yes. Related <i>Ochna serrulata</i> can resprout after cutting] " <i>Ochnas</i> have a very long taproot. Often at soil level or just below, the stem will have a kink in it which snaps easily when pulled. The taproot is usually twice the length or more of the above ground stem and contains loads of energy to resprout which it does 9 times out of 10 when cut or broken off. If your <i>Ochna</i> plant is over 10 cm high you'll have to dig a 20 cm hole to get it out or scrape the side of the stem and paint it with glyphosate. If your <i>Ochna</i> is 2 metres high, the easiest, most effective control is to scrape and paint the stems with glyphosate."
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

- Thrives in tropical climates
- Environmental versatility (elevation range exceeds 1000 m)
- Related *Ochna* species can be highly invasive
- Shade-tolerant
- Seeds dispersed by birds and possibly by water

Low Risk / Desirable Traits

- No reports of naturalization or invasiveness have been documented
- Unarmed (no spines, thorns or burrs)
- Landscaping and ornamental value
- Slow growth rate and long time to maturity
- Relatively large fruit & seeds unlikely to be inadvertently dispersed
- Seed viability is relatively short (will not form a persistent seed bank)