

Key Words: Evaluate, Naturalized, Ornamental Palm, Tropical, Betel Substitute

**Family:** *Arecaceae*

**Taxon:** *Actinorhysis calapparia*

**Synonym:** *Areca calapparia* Blume (*basionym*)

**Common Name:** calappa palm  
pinang penawar

**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	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)	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	
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	
405	Toxic to animals	y=1, n=0	n
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	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	n
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	
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	
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/m <sup>2</sup> )	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
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**

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**Supporting Data:**

101	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Is the species highly domesticated? No evidence]
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Species suited to tropical or subtropical climate(s) 2-High] "Climate Zones: New Guinea and the Solomon Islands. "
202	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Quality of climate match data 2-High]
203	2012. Dave's Gardern. PlantFiles: Calappa Palm - Actinorhytis calapparia. <a href="http://davesgarden.com/guides/pf/go/156644/">http://davesgarden.com/guides/pf/go/156644/</a> [Accessed 19 Nov 2012]	[Broad climate suitability (environmental versatility)? No] "Hardiness: USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"
203	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Broad climate suitability (environmental versatility)? Borderline. Elevation range 1000 m] "Habitat: Tropical rainforests from sea level to 1000m (3000). "
204	1999. Essig, F.B./Manka,T.J./Bussard, L.. A Systematic Histological Study of Palm Fruits. III. Subtribe Iguanurinae (Arecaceae). Brittonia. 51(3): 307-325.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "the Solomon Islands, with an additional species restricted to the Solomons"
204	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Climate Zones: New Guinea and the Solomon Islands. "
205	2007. Randall, R.P.. The introduced flora of Australia and its weed status. CRC for Australian Weed Management, Glen Osmond, Australia	[Does the species have a history of repeated introductions outside its natural range? Australia]
205	2009. Chong, K.Y./Tan, H.T.W./Corlett, R.T.. A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	[Does the species have a history of repeated introductions outside its natural range? Singapore]
205	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Does the species have a history of repeated introductions outside its natural range? Yes] "Naturalized: ASIA-TROPICAL: Indo-China: Thailand; Malesia: Indonesia - Sumatra; Malaysia"
301	2007. Randall, R.P.. The introduced flora of Australia and its weed status. CRC for Australian Weed Management, Glen Osmond, Australia	[Naturalized beyond native range? No evidence in Australia]
301	2009. Chong, K.Y./Tan, H.T.W./Corlett, R.T.. A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	[Naturalized beyond native range? No evidence in Singapore] "cultivated only"
301	2012. Nickrent, D.L./Barcelona, J./Pelser, P./Molina, J.E./Callado, J.R.. Co's Digital Flora of the Philippines. <a href="http://www.philippineplants.org/">http://www.philippineplants.org/</a>	[Naturalized beyond native range? No evidence] "Widespread in Malesia but probably not native to the Philippines. MINDANAO: Davao. Isolated trees in agricultural lands mostly planted with coconut and betel nut, c. 500m altitude."
301	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Naturalized beyond native range? Unknown] Report of "unconfirmed naturalization" in the Philippines
301	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Naturalized beyond native range? Yes] "Naturalized: ASIA-TROPICAL: Indo-China: Thailand; Malesia: Indonesia - Sumatra; Malaysia"

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	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Produces spines, thorns or burrs? No evidence] "The palm grows to 40 or 50 feet in habitat with a slender, light-colored trunk that is never more than 8 inches in diameter."
401	2010. French, B.R.. Food Plants of Solomon Islands. A compendium. Food Plants International Inc., Burnie, Tasmania	[Produces spines, thorns or burrs? No] "Description: A tall palm with a narrow trunk. The trunk is grey-brown with a bright green crownshaft. It has an appearance a little like a coconut. It grows 20 - 30 m high. The fronds are divided along the leaf stalk into narrow leaflets. These have a sharp point. These leaflets (pinnae) have one strong mid-nerve and 4 - 5 parallel side veins. The leaf sheath is about 1 - 1.3 m long. The flowering stalk comes from below the crownshaft. This has one stiff main axis, 4 - 5 stiff side branches and many twigs which hang down. The whole flowering stalk is about 1 m long. There are two spathes, or leaf-like structures, protecting the flowering palm stalk. These are about 1 m long."
402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2012. Tropicos.org. Tropicos [Online Database]. Missouri Botanical Garden, <a href="http://www.tropicos.org/">http://www.tropicos.org/</a>	[Parasitic? No] Arecaceae
404	2012. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	2001. Hanelt, P. (ed.). Mansfeld's encyclopedia of agricultural and horticultural crops: (except ornamentals). Angiospermae - monocotyledones: orchidaceae - pandanaceae, Volume 5. Springer-Verlag, Berlin, Heidelberg, New York	[Toxic to animals? No evidence]
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No evidence]
406	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Host for recognized pests and pathogens? No evidence]
406	2012. WRA Specialist. Personal Communication.	[Host for recognized pests and pathogens? Unknown]
407	2000. Lewis, C.E./Zona, S.. A survey of cyanogenesis in palms (Arecaceae). Biochemical Systematics and Ecology. 28: 219-228.	[Causes allergies or is otherwise toxic to humans? No evidence] "Table 1 Results of cyanogenesis survey in leaf tissue of 167 palm accessions." ... [No evidence in <i>Actinorhysis calapparia</i> ]
407	2001. Hanelt, P. (ed.). Mansfeld's encyclopedia of agricultural and horticultural crops: (except ornamentals). Angiospermae - monocotyledones: orchidaceae - pandanaceae, Volume 5. Springer-Verlag, Berlin, Heidelberg, New York	[Causes allergies or is otherwise toxic to humans? No evidence] "In Java the seeds are chewed like betel."
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]
408	2010. French, B.R.. Food Plants of Solomon Islands. A compendium. Food Plants International Inc., Burnie, Tasmania	[Creates a fire hazard in natural ecosystems? No evidence, and unlikely given rainforest habitat] "Distribution: It grows in tropical rainforest from India to Solomon Islands. It is widespread in Papua New Guinea."
409	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Is a shade tolerant plant at some stage of its life cycle? Yes] "The palm is adapted to sun or partial shade, although young plants prefer semi-shade or even shade."

409	2012. PACSOA. Palms: <i>Actinorhytis calapparia</i> . PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Is a shade tolerant plant at some stage of its life cycle?] "Cold sensitive, so it likes a sunny, well drained position in the tropics. "
410	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Tolerates a wide range of soil conditions? No] "It is a true water lover and cannot withstand drought. It performs poorly in soil lacking nutrients and needs organic matter amended into calcareous soils to thrive."
411	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Climbing or smothering growth habit? No] "The palm grows to 40 or 50 feet in habitat with a slender, light-colored trunk that is never more than 8 inches in diameter."
412	2010. French, B.R.. Food Plants of Solomon Islands. A compendium. Food Plants International Inc., Burnie, Tasmania	[Forms dense thickets? No evidence] "Distribution: It grows in tropical rainforest from India to Solomon Islands. It is widespread in Papua New Guinea."
412	2012. Nickrent, D.L./Barcelona, J./Pelser, P./Molina, J.E./Callado, J.R.. Co's Digital Flora of the Philippines. <a href="http://www.philippineplants.org/">http://www.philippineplants.org/</a>	[Forms dense thickets? No evidence] "Isolated trees in agricultural lands mostly planted with coconut and betel nut, c. 500m altitude."
501	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Aquatic? No] " <i>Actinorhytis calapparia</i> grows naturally in Papua New Guinea and the Solomon Islands in rain forest from sea level to 3000 feet elevation."
502	2012. Tropicos.org. Tropicos [Online Database]. Missouri Botanical Garden, <a href="http://www.tropicos.org/">http://www.tropicos.org/</a>	[Grass? No] Arecaceae
503	2012. Tropicos.org. Tropicos [Online Database]. Missouri Botanical Garden, <a href="http://www.tropicos.org/">http://www.tropicos.org/</a>	[Nitrogen fixing woody plant? No] Arecaceae
504	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "The palm grows to 40 or 50 feet in habitat with a slender, light-colored trunk that is never more than 8 inches in diameter."
601	2010. French, B.R.. Food Plants of Solomon Islands. A compendium. Food Plants International Inc., Burnie, Tasmania	[Evidence of substantial reproductive failure in native habitat? No evidence] "Distribution: It grows in tropical rainforest from India to Solomon Islands. It is widespread in Papua New Guinea."
602	2001. Ellison, D./Ellison, A.. Cultivated palms of the world. UNSW Press, Sydney.	[Produces viable seed? Yes] "Ripened fruit is red and seed takes 8 to 12 weeks to begin germination."
603	2012. Krishna Kumar, H.N./Preethi, S.D./Jyoti Bala Chauhan. Studies on the Antioxidant Activity of <i>Actinorhytis calapparia</i> . International Journal of Applied Biology and Pharmaceutical Technology. 3(2): 50-55.	[Hybridizes naturally? No evidence of inter-generic hybridization] " <i>Actinorhytis</i> is a monotypic genus of flowering plant in the palm family found in Oceania. The lone species <i>Actinorhytis calapparia</i> is a rain forest inhabitant and has the largest fruit of any palm in the Iguanurinae (Uhl et al., 1987). This palm is endemic to New Guinea and the Solomon Islands thriving in lowland rain forest from sea level to 1000m."
604	2010. French, B.R.. Food Plants of Solomon Islands. A compendium. Food Plants International Inc., Burnie, Tasmania	[Self-compatible or apomictic? Unknown] "The flowers are of separate sexes, both on the same tree. At the base of the flowering stalk there is one female flower to two male flowers, but towards the tip the flowers are only male. Female flowers are larger than the male."
605	1994. Zomlefer, W.B.. Guide to Flowering Plant Families. The University of North Carolina Press, Chapel Hill & London	[Requires specialist pollinators? No evidence] "...the flowers actually are predominantly entomophilous."
605	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Requires specialist pollinators? Probably No. Floral structure suggests unspecialized pollination] "The inflorescences form a ring around the base of the crownshaft and are many branched with masses of cream-colored flowers of both sexes."
606	2011. Jungle Music Palms and Cycads. <i>Actinorhytis calapparia</i> . <a href="http://www.junglemusic.net/palms/actinorhytis-calapparia.htm">http://www.junglemusic.net/palms/actinorhytis-calapparia.htm</a> [Accessed 20 Nov 2012]	[Reproduction by vegetative fragmentation? No evidence] "Suckering/Solitary: Solitary (single trunk)"
607	2012. Dave's Gardern. PlantFiles: Calappa Palm - <i>Actinorhytis calapparia</i> . <a href="http://davesgarden.com/guides/pf/go/156644/">http://davesgarden.com/guides/pf/go/156644/</a> [Accessed 19 Nov 2012]	[Minimum generative time (years)?] "Very fast growing palm (one of the fastest of all palms)."
701	1999. Essig, F.B./Manka, T.J./Bussard, L.. A Systematic Histological Study of Palm Fruits. III. Subtribe Iguanurinae (Arecaceae). <i>Brittonia</i> . 51(3): 307-325.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unlikely given large size] "Fruit 45 mm diam., pericarp 4-5 mm thick, stigmatic remains apical-not clearly similar to any other genus of the Iguanurinae."

701	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Unlikely. Large fruits lack means of external attachment] "Oval, red fruits to 6cm (2.5"). "
702	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Propagules dispersed intentionally by people? Yes] "This is among the world's most beautiful palms." [Ornamental and landscaping value]
703	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Propagules likely to disperse as a produce contaminant? Unlikely. Large fruits would not become a contaminant of produce] "Oval, red fruits to 6cm (2.5"). "
704	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Propagules adapted to wind dispersal? No] "Oval, red fruits to 6cm (2.5"). "
705	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Propagules water dispersed? Unknown] "The large egg-shaped fruits are 3 inches long and are borne in heavy, pendent masses; each one is red or reddish brown to purplish olive when ripe." [Buoyancy of fruit unknown]
706	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Propagules bird dispersed? Possibly Yes, but probably too large for most birds in the Hawaiian Islands] "Oval, red fruits to 6cm (2.5"). "
707	2012. WRA Specialist. Personal Communication.	[Propagules dispersed by other animals (externally)? Unknown] Fruits and seeds lack means of external attachment, but it may be possible that seed caching rodents or frugivorous mammals may carry fruit externally for pulp consumption or seed predation.
708	2012. PACSOA. Palms: Actinorhytis calapparia. PACSOA (Palm and Cycad Society of Australia), <a href="http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html">http://www.pacsoa.org.au/palms/Actinorhytis/calapparia.html</a> [Accessed 18 Nov 2012]	[Propagules survive passage through the gut? Presumably Yes. Fleshy-fruited & likely adapted for internal dispersal] "Oval, red fruits to 6cm (2.5"). "
801	2012. Krishna Kumar, H.N./Preethi, S.D./Jyoti Bala Chauhan. Studies on the Antioxidant Activity of Actinorhytis calapparia. International Journal of Applied Biology and Pharmaceutical Technology. 3(2): 50-55.	[Prolific seed production (>1000/m <sup>2</sup> )? No] "The inflorescence becomes pendent as the large fruit set; the beaked, ovoid fruit are red to purple to green; each fruit contains one seed." [Large, single-seeded fruit unlikely to reach such high densities]
802	2001. Baskin, C.C./Baskin, J.M.. Seeds ecology, biogeography, and evolution of dormancy and germination. Academic Press, San Francisco, CA	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] Seeds described as having morphophysiological dormancy [Table 9.1]
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a>	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown]
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species.
804	2003. Riffle, R.L./Craft, P.. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown] "...solitary, slender-trunked pinnate-leaved, monoecious palms..." [Probably would be killed if single trunk was cut]
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**

- Reported to be naturalized in Indo-China: Thailand; Malesia: Indonesia - Sumatra; Malaysia
- Thrives in tropical climates
- Shade tolerant
- Fleshy fruits possibly aid in dispersal by birds, mammals and humans

### **Low Risk / Desirable Traits**

- Despite reports of naturalization, not documented as invasive or weedy
- Unarmed (no spines, thorns or burrs)
- Non-toxic
- Landscaping and ornamental value
- Seeds are chewed like betel
- Large fruits & seeds unlikely to be inadvertently dispersed