

Taxon: Suregada multiflora (A. Juss.) Baill.	Family: Euphorbiaceae
Common Name(s): false lime tree	Synonym(s): Gelonium multiflorum A. Juss.

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 1 Jul 2019
WRA Score: 0.0	Designation: L	Rating: Low Risk

Keywords: Tropical Shrub/Tree, Unarmed, Medicinal, Dioecious, Zoochorous

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	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)	n
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic	y=1, n=0	y
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle		
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y

Qsn #	Question	Answer Option	Answer
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		
604	Self-compatible or apomictic	y=1, n=-1	n
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)		
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)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[No evidence of domestication] "Lowland and montane thickets; below 100–600 m. S Guangdong, S Guangxi, Hainan, S Yunnan [Bangladesh, Cambodia, Laos, Malaysia, Myanmar, Thailand, Vietnam]."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 30 Jun 2019]	"Native Asia-Temperate CHINA: China [Guangxi Zhuangzu Zizhiqu, Yunnan Sheng, Guangdong Sheng, Hainan Sheng] Asia-Tropical INDIAN SUBCONTINENT: Bangladesh, India [Andhra Pradesh, Assam, Sikkim, West Bengal] INDO-CHINA: India, [Andaman and Nicobar Islands] Indochina, Laos, Myanmar, Thailand, Vietnam MALESIA: Indonesia, [Sumatera] Malaysia (Malaya)"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 30 Jun 2019]	

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

Qsn #	Question	Answer
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Lowland and montane thickets; below 100–600 m."
	Airy Shaw, H. K. (1981). The Euphorbiaceae of Sumatra. Kew Bulletin, 36(2), 239-374	"Shrub or treelet to 6 m, in primary or montane rain-forest on sandstone or limestone at 600-1500 m."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Lowland and montane thickets; below 100–600 m. S Guangdong, S Guangxi, Hainan, S Yunnan [Bangladesh, Cambodia, Laos, Malaysia, Myanmar, Thailand, Vietnam]."
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 30 Jun 2019]	"Native Asia-Temperate CHINA: China [Guangxi Zhuangzu Zizhiqu, Yunnan Sheng, Guangdong Sheng, Hainan Sheng] Asia-Tropical INDIAN SUBCONTINENT: Bangladesh, India [Andhra Pradesh, Assam, Sikkim, West Bengal] INDO-CHINA: India, [Andaman and Nicobar Islands] Indochina, Laos, Myanmar, Thailand, Vietnam MALESIA: Indonesia, [Sumatera] Malaysia (Malaya)"

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	Limited evidence of cultivation outside native range

301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Wagner, W.L., Herbst, D.R. & Lorence, D.H. (2019). Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/ . [Accessed 1 Jul 2019]	No evidence to date

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Kerala Plants. (2019). <i>Suregada multiflora</i> . http://keralaplants.in . [Accessed 30 Jun 2019]	"Weed: No"
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

Qsn #	Question	Answer
303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Kerala Plants. (2019). <i>Suregada multiflora</i> . http://keralaplants.in . [Accessed 30 Jun 2019]	"Weed: No"
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Kerala Plants. (2019). <i>Suregada multiflora</i> . http://keralaplants.in . [Accessed 30 Jun 2019]	"Weed: No"
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	n
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i> . Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[No evidence] "Shrubs or trees, 2–13 m tall; branches gray-yellow to graybrown, glabrous. Petiole 3–12 mm, glabrous; leaf blade obovateelliptic to obovate-lanceolate or oblong-elliptic, 5–16 × 3–8 cm, thinly leathery, glabrous, base cuneate or broadly cuneate, margin entire, apex acute or shortly acuminate; lateral veins 5–9. Inflorescences pedunculate cymules; pedicels and sepals puberulent; flowers 5–8 mm in diam. Male flowers: sepals orbicular, margin shallowly serrate; stamens 30–60; disk glands small, inserted at base of filaments. Female flowers: disk annular; ovary globose, glabrous; styles 3, horizontal, 2-lobed, lobes shallowly bifid to irregularly multifid. Sepals persistent in fruit; capsule globose, 11–15 mm, slightly fleshy, subglabrous, 3-seeded."

402	Allelopathic	y
	Source(s)	Notes

Qsn #	Question	Answer
	Laosinwattana, C., Boonleom, C., Teerarak, M., Thitavasanta, S., & Charoenying, P. (2010). Potential allelopathic effects of <i>Suregada multiflorum</i> and the influence of soil type on its residue's efficacy. <i>Weed Biology and Management</i> , 10(3), 153-159	[Demonstrates allelopathy in laboratory conditions] "This experiment was conducted to determine the potential allelopathic effects of the aqueous extracts and dried leaf powder of <i>Suregada multiflorum</i> and to find the herbicidal effects of its granule on the weed species, barnyardgrass (<i>Echinochloa crus-galli</i>) and slender amaranth (<i>Amaranthus viridis</i>), in various growth media (germination paper, sand, and soil). Observations in this study demonstrated that the potential and magnitude of their inhibitory effects varied among the plant parts. The leaves and branches possessed the strongest inhibition levels, followed by the bark. The aqueous extract from the leaves of <i>S. multiflorum</i> had a remarkably stronger inhibitory effect on the germination and growth of slender amaranth, compared with barnyardgrass; when applied at the concentration of 100 g L ⁻¹ , it completely inhibited the germination and initial seedling growth of slender amaranth. In addition, all the treatments of the dried leaf powder had stronger inhibition effects than the aqueous extract. Interestingly, the inhibitory effects of the dried leaf granule of <i>S. multiflorum</i> were stronger than the effects of the dried leaf powder at equal rates. The degree of inhibitory effect of the <i>S. multiflorum</i> granule, applied in various growing media, can be classified in order of decreasing inhibition as germination paper = sand > clay soil. The present study indicates that the <i>S. multiflorum</i> granule product that was developed in this research has the potential to provide a powerful organic herbicide for controlling slender amaranth."

403	Parasitic	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i> . Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Shrubs or trees, 2–13 m tall; branches gray-yellow to gray-brown, glabrous." [Euphorbiaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Suarez, S. A. (2013). Diet of Phayre's leaf-monkey in the Phu Khieo Wildlife Sanctuary, Thailand. <i>Asian Primates Journal</i> , 3(1), 2-12	[Fruit and leaves consumed by monkeys. Potentially palatable to other browsing animals] "Table 3. Plant species comprising more than 1% of the annual diet based on number of feeding observations, with their individual and cumulative contribution to diet." [<i>Suregada multiflora</i> - Plant part consumed = imm=immature, wh=whole fruits, ml=mature leaves]

405	Toxic to animals	n
	Source(s)	Notes
	Suarez, S. A. (2013). Diet of Phayre's leaf-monkey in the Phu Khieo Wildlife Sanctuary, Thailand. <i>Asian Primates Journal</i> , 3(1), 2-12	[Fruit and leaves consumed by monkeys. No reports of toxicity] "Table 3. Plant species comprising more than 1% of the annual diet based on number of feeding observations, with their individual and cumulative contribution to diet." [<i>Suregada multiflora</i> - Plant part consumed = imm=immature, wh=whole fruits, ml=mature leaves]

Qsn #	Question	Answer
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i> . https://florafauanaweb.nparks.gov.sg . [Accessed 1 Jul 2019]	"Pest(s) : Sucking Insects"
	Chandrapatya, A., Konvipasruang, P., & Amrine, J. W. (2016). New eriophyoid mites from Thailand. <i>Systematic and Applied Acarology</i> , 21(1), 55-79	"Six new genera and new species of eriophyoid mites from Thailand were reported in this paper. They are <i>Yangnarus dipterocarpi</i> and <i>Rapinarus maphoki</i> on <i>Dipterocarpus alatus</i> Roxb. ex G. Don (Dipterocarpaceae); <i>Longanella lamyai</i> and <i>Lamyacarus longani</i> on <i>Dimocarpus longan</i> Lour. ssp. <i>longan</i> var. <i>longan</i> (Sapindaceae); <i>Kradukarus suregadi</i> on <i>Suregada multiflora</i> (A.Juss.) Baill. (Euphorbiaceae) and <i>Wangthonga phayomae</i> on <i>Shorea roxburghii</i> G. Don (Dipterocarpaceae). All of them are vagrants found on the under leaf surfaces." [Eriophyidae is a family of more than 200 genera of mites, which live as plant parasites, commonly causing galls or other damage to the plant tissues and hence known as gall mites.]
	WRA Specialist. (2019). Personal Communication	Limited information on pests and pathogens of this species found. Importance as a host plant unknown

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	[Used medicinally. No evidence] "Root decoction in fever. Bark purgative, in liver complaints. Ripe fruits after boiling in mustard oil are applied to boils. Leaves pounded in coconut oil applied on the belly for stomachache."

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Airy Shaw, H. K. (1981). The Euphorbiaceae of Sumatra. <i>Kew Bulletin</i> , 36(2), 239-374	"Shrub or treelet to 6 m, in primary or montane rain-forest on sandstone or limestone at 600-1500 m." [Rainforest habitat unlikely to experience frequent fires]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Top Tropicals. (2019). <i>Suregada multiflora</i> . https://toptropicals.com/catalog/uid/Suregada_multiflora.htm . [Accessed 1 Jul 2019]	"Full sun Semi-shade"

Qsn #	Question	Answer
	Monaco Nature Encyclopedia. (2019). <i>Suregada multiflora</i> . https://www.monaconatureencyclopedia.com/suregada-multiflora-2/?lang=en . [Accessed 1 Jul 2019]	"It grows in the tropical and humid subtropical climates in full sun or slight shade and is not particular about the soil, provided draining and maintained moderately humid."
	NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i> . https://florafauanaweb.nparks.gov.sg . [Accessed 1 Jul 2019]	"Light Preference : Full Sun"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Monaco Nature Encyclopedia. (2019). <i>Suregada multiflora</i> . https://www.monaconatureencyclopedia.com/suregada-multiflora-2/?lang=en . [Accessed 1 Jul 2019]	"It grows in the tropical and humid subtropical climates in full sun or slight shade and is not particular about the soil, provided draining and maintained moderately humid."
	NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i> . https://florafauanaweb.nparks.gov.sg . [Accessed 1 Jul 2019]	"Plant & Rootzone Preference/Tolerance : Moist Soils, Well-Drained Soils, Saline Soils / Salt Spray, Fertile Loamy Soils"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i> . Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Shrubs or trees, 2–13 m tall; branches gray-yellow to gray-brown, glabrous."

412	Forms dense thickets	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i> . Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Lowland and montane thickets; below 100–600 m." [A component of thicket vegetation, but no evidence found that this species forms dense, monotypic stands]
	Azmi, W. A., Zulqurnain, N. S., & Ghazi, R. (2015). Melissopalynology and foraging activity of stingless bees, <i>Lepidotrigona terminata</i> (Hymenoptera: Apidae) from an apiary in Besut, Terengganu. <i>Journal of Sustainability Science and Management</i> , 10(1), 27-35	[No evidence] "There are commonly on all rocky and sandy coasts; inland scattered lowlands to 300m, once (Johor, G. Blumut) at 750m, rarely on limestone. Usually shrub or small tree to 12m tall."

501	Aquatic	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i> . Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Terrestrial] "Shrubs or trees, 2–13 m tall" ... "Lowland and montane thickets; below 100–600 m."

502	Grass	n
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Qsn #	Question	Answer
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 30 Jun 2019]	Family: Euphorbiaceae Subfamily: Crotonoideae Tribe: Gelonieae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 30 Jun 2019]	Family: Euphorbiaceae Subfamily: Crotonoideae Tribe: Gelonieae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Shrubs or trees, 2–13 m tall"

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Lemmens, R.H.M.J. & Bunyapraphatsara, N. (Eds.). (2003). Plant Resources of South-East Asia. No 12(3). Medicinal and Poisonous Plants 3. Backhuys Publishers, Leiden, The Netherlands	"Genetic resources Both <i>Suregada</i> species treated here are widespread and, at least locally, common. The genetic variation is still unknown."
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[No evidence. Widely distributed] "Lowland and montane thickets; below 100–600 m. S Guangdong, S Guangxi, Hainan, S Yunnan [Bangladesh, Cambodia, Laos, Malaysia, Myanmar, Thailand, Vietnam]."

602	Produces viable seed	y
	Source(s)	Notes
	Monaco Nature Encyclopedia. (2019). <i>Suregada multiflora</i> . https://www.monaconatureencyclopedia.com/suregada-multiflora-2/?lang=en . [Accessed 1 Jul 2019]	"It reproduces by seed in draining loam maintained moderately humid at the temperature of 24-26 C."

Qsn #	Question	Answer
	Dey, S., & Hossain, M. K. (2019). Containers Effects on Seed Germination and Initial Growth Performance of <i>Suregada multiflora</i> (Ban-naringa) Seedlings: A Native Lesser Known Tree Species in Bangladesh. <i>Indian Forester</i> , 145(4), 381-386	" <i>Suregada multiflora</i> (Ban-naringa) is an important native lesser known tree species growing in natural forests of Bangladesh. In the study, seeds were sown in polybag, seedbed and propagator house and investigated to find out the suitable media for raising quality seedlings for large scale plantation programs. Germination percentage, survival percentage, shoot length, root length, collar diameter, fresh and dry weight, leaf number were assessed for 10 months old seedlings in the nursery. Germination value, vigor index, sturdiness, volume index, root-shoot ratio, quality index were also assessed for each treatments. Seedlings raised in propagator house (T3) took short imbibition period (12 days) but lengthy germination period (13 days). Maximum germination and survival percentage (respectively 100% and 90%) was recorded in propagator house (T3) followed by 70% germination and 85.7% survival percentage in polybag (T1). Highest root- 1 shoot ratio (0.69) and sturdiness (77.71) was observed in polybag (T1). Seedlings raised in seedbed (T2) found maximum collar diameter, fresh and 2 dry weight, volume index and vigor index which were significantly ($P < 0.05$) different from T1 and T3 . Growth rate was minimum in T3 and maximum in T2 treatments. Finally, polybag of size 15 × 10 cm was found suitable in the nursery for quality seedling production of <i>Suregada multiflora</i> ."

603	Hybridizes naturally	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	Unknown. No evidence found

604	Self-compatible or apomictic	n
	Source(s)	Notes
	NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i> . https://florafauweb.nparks.gov.sg . [Accessed 1 Jul 2019]	"Flower & Plant Sexuality : Unisexual Flowers (Dioecious)"
	Salim, J. M., Yusuf, N., Ibrahim, K., Baharuddin, N., & Salam, M. R. (2011). Brief floristic descriptions of Jambu Bongkok Forest Reserve, BRIS ecosystem and Melaleuca swamp of Terengganu. Pp. 11-29 in Mohd, J. 7 Mohamad, S.F. A Biological Assessment of Jambu Bongkok Forest Reserve, Terengganu and Nearby Ecosystem. Department of Biological Sciences, Universiti Malaysia Terengganu	"It is a dioecious plant type. It flower usually in small clusters, opposite the leaves; tiny; sepals 5, strongly overlapping, apetalous; male with glandular receptacle, stamens numerous free, pistillode 0; female sepals longer than male; disc with papery margin, sometimes with tiny staminodes, ovary 2-3 chambered, styles short, spreading, very shortly divided."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Kato, M., Kosaka, Y., Kawakita, A., Okuyama, Y., Kobayashi, C., Phimminith, T., & Thongphan, D. (2008). Plant-pollinator interactions in tropical monsoon forests in Southeast Asia. <i>American Journal of Botany</i> , 95(11), 1375-1394	"The flower visitor spectra of 55 plant species that received more than four insect visits were subjected to cluster analysis." ... "CL4 was composed of five plant species (<i>Phyllanthus roseus</i> , <i>Sauropus quadrangularis</i> , <i>Dialium cochinchinensis</i> , <i>Mallotus barbatus</i> , and <i>Suregada multiflora</i>), that were visited mainly by flies. These plants have small rotate flowers."

Qsn #	Question	Answer
	<p>Azmi, W. A., Zulqurnain, N. S., & Ghazi, R. (2015). Melissopalynology and foraging activity of stingless bees, <i>Lepidotrigona terminata</i> (Hymenoptera: Apidae) from an apiary in Besut, Terengganu. <i>Journal of Sustainability Science and Management</i>, 10(1), 27-35</p>	<p>[Visited by stingless bees] "Abstract: Melissopalynology or study of pollen is crucial in understanding the crops and plants that are foraged by bees as their food source because bees have species-specific preferences of pollens. Pollen analysis is also important to the sustainable development of apiculture industry especially for the premium marketable honey and honey products. The aims of this study were to identify the pollens collected by stingless bees, <i>Lepidotrigona terminata</i> (Hymenoptera: Apidae) in an apiary of Besut, Terengganu from November 2012 until February 2013 and to investigate the effective time of foraging activity by the stingless bees. A total of 11 types of pollens were collected from the <i>L. terminata</i> foragers, however only 9 types of the pollens were successfully identified. The identified pollens were <i>Murraya paniculata</i>, <i>Citrus hystrix</i>, <i>Calophyllum inophyllum</i>, <i>Ixora coccinea</i>, <i>Bougainvillea glabra</i> (Type 1 and 2), <i>Mimosa pudica</i>, <i>Asystasia gangetica</i> and <i>Suregada multiflora</i>. <i>Ixora coccinea</i> was the most dominant pollen collected by <i>L. terminata</i>. Morning (0800- 1100) and late afternoon (1400-1800) were found to be the most effective times for foraging activity of <i>L. terminata</i>. Our findings provide information on the favored bee plant species which is clearly an important pre-requisite for launching apiary industry in any locality. It is hoped that this study will enhance the knowledge of beekeepers on crop preferences for stingless bee cultures."</p>

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	<p>NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i>. https://florafauanaweb.nparks.gov.sg. [Accessed 1 Jul 2019]</p>	"Propagation Method : Seed"

607	Minimum generative time (years)	n
	Source(s)	Notes
	<p>NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i>. https://florafauanaweb.nparks.gov.sg. [Accessed 1 Jul 2019]</p>	"Growth Rate : Moderate" [Unknown]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	<p>Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i>. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis</p>	"Sepals persistent in fruit; capsule globose, 11–15 mm, slightly fleshy, subglabrous, 3-seeded." [No evidence. No means of external attachment]
	<p>Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i>, 10(1), 169-177</p>	"Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]

702	Propagules dispersed intentionally by people	y
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Qsn #	Question	Answer
	Source(s)	Notes
	rarepalmseeds.com. (2019). <i>Suregada multiflora</i> False Lime. https://www.rarepalmseeds.com/suregada-multiflora . [Accessed 30 Jun 2019]	[Seeds sold commercially] "Minimum order value for orders containing SMALL PACKETS only is EUR 25. For orders containing WHOLESALE sizes only (or mixed orders) minimum order value is EUR 100. Worldwide shipping. Prices excl. shipping costs."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i> , 10(1), 169-177	[Animal-dispersed tree/shrub; Unlikely to ever become a produce contaminant] "Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. <i>Flora of China</i> . Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Sepals persistent in fruit; capsule globose, 11–15 mm, slightly fleshy, subglabrous, 3-seeded."
	Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i> , 10(1), 169-177	"Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]

705	Propagules water dispersed	n
	Source(s)	Notes
	Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i> , 10(1), 169-177	"Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]
	NParks Flora&FaunaWeb. (2019). <i>Suregada multiflora</i> . https://florafauanaweb.nparks.gov.sg . [Accessed 1 Jul 2019]	"The seeds are probably dispersed by birds."

706	Propagules bird dispersed	y
	Source(s)	Notes
	Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i> , 10(1), 169-177	"Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]
	Salim, J. M., Yusuf, N., Ibrahim, K., Baharuddin, N., & Salam, M. R. (2011). Brief floristic descriptions of Jambu Bongkok Forest Reserve, BRIS ecosystem and Melaleuca swamp of Terengganu. Pp. 11-29 in Mohd, J. 7 Mohamad, S.F. A Biological Assessment of Jambu Bongkok Forest Reserve, Terengganu and Nearby Ecosystem. Department of Biological Sciences, Universiti Malaysia Terengganu	[Fruits fleshy; seeds coated with pulp and brightly colored. Likely attracts frugivores] "Fruit : typically a smooth, or armed, 3-lobed, woody capsule, splitting, often explosively, at chamber walls into 3 bivalve parts, or 2 or not lobed; or fleshy to leathery, not splitting and often with a stone. It usually round or shouldered, fleshy to leathery, not or tardily splitting from apex to base, the 3 seeds thinly coated with pulp. Seed : always few. Sometimes with the outer wall a fleshy jacket (sarcoesta) and brightly colored. It has endosperm oily."

Qsn #	Question	Answer
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Possibly bird-dispersed, or consumed and dispersed by other frugivorous animals] "Sepals persistent in fruit; capsule globose, 11–15 mm, slightly fleshy, subglabrous, 3-seeded."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i> , 10(1), 169-177	[Adapted for internal dispersal] "Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Esser, H. J. (2003). Fruit characters in Malesian Euphorbiaceae. <i>Telopea</i> , 10(1), 169-177	[Presumably yes] "Table 1. Malesian genera of Euphorbiaceae and the presence of zoochorous diaspores." [Suregada - Diaspore type = z = presumably zoochorous diaspores]

801	Prolific seed production (>1000/m ²)	
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2008. Flora of China. Vol. 11 (Oxalidaceae through Aceraceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	"Sepals persistent in fruit; capsule globose, 11–15 mm, slightly fleshy, subglabrous, 3-seeded."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2019) Seed Information Database (SID). Version 7.1. Available from: http://data.kew.org/sid/ . [Accessed 1 Jul 2019]	[Unknown] "Storage Behaviour: No data available for species or genus. Of 119 known taxa of family EUPHORBIACEAE, 92.44% Orthodox(p?), 1.68% Recalcitrant(?), 5.88% Uncertain"

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Northern Land Manager. 2011. Fire responses of <i>Suregada glomerulata</i> . http://www.landmanager.org.au/fire-responses-suregada-glomerulata . [Accessed 1 Jul 2019]	[Congeneric species resprouts after fires] "Adult fire response: Resprouter (<30% mortality when subject to 100% leaf scorch)"
	WRA Specialist. (2019). Personal Communication	Unknown

Qsn #	Question	Answer
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives in tropical climates
- Allelopathic
- Tolerates many soil types
- Reproduces by seeds
- Seeds presumably dispersed by birds, other animals and intentionally by people
- Gaps in biological and ecological information may reduce accuracy of risk prediction

Low Risk Traits

- No reports of invasiveness or naturalization, but no evidence of widespread introduction outside native range
- Unarmed (no spines, thorns, or burrs)
- Dioecious
- Not reported to spread vegetatively