

**Taxon:** *Syzygium polyanthum* (Wight) Walp.

**Family:** Myrtaceae

**Common Name(s):** Indian bayleaf  
Indonesian bayleaf

**Synonym(s):** *Eugenia holmanii* Elmer  
*Eugenia junghuhniana* Miq.  
*Eugenia lambii* Elmer  
*Eugenia lucidula* Miq.  
*Eugenia microbotrya* Miq.  
*Eugenia pamatensis* Miq.  
*Eugenia resinosa* Gagnep.  
*Syzygium micranthum* Blume ex Miq.  
*Syzygium microbotryum* (Miq.)  
*Syzygium pamatense* (Miq.) Masam.

**Assessor:** Chuck Chimera

**Status:** Assessor Approved

**End Date:** 13 Sep 2019

**WRA Score:** 3.0

**Designation:** H(HPWRA)

**Rating:** High Risk

**Keywords:** Tropical Tree, Shade Tolerant, Spice Plant, Bird-Dispersed, Coppices

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	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		
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		

Qsn #	Question	Answer Option	Answer
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		
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		
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		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
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		
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y

Qsn #	Question	Answer Option	Answer
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
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	[No evidence of domestication] "Syzygium polyanthum is a medium-sized tree to 30 m tall and 60 cm diameter preferring well drained, fertile soil up to 1300 m altitude . In Malaysia the timber is known by the trade name kelat. It is a medium to heavy hardwood used in house construction (poles, posts), window sills, furniture, flooring, telegraph poles, fibre board, veneer and plywood. It is also used for charcoal and fuelwood. The wood is pale brown to pinkish-brown and the density is 540-790 kg/cubic metre at 15% moisture content. The bark is used for tanning fishing nets and for dyeing mattings. The bark, roots and leaves are used medicinally whilst the aromatic leaves are used as a spice with foods and the fruits are edible. This is a shade tolerant species and a good coppicer. It has been used for under-planting in teak plantations to reduce weeds."

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]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 13 Sep 2019]	"Native Asia-Tropical INDO-CHINA: Indochina, Myanmar, Thailand MALESIA: Brunei Darussalam, Indonesia, [Kalimantan, Jawa, Sumatera] Malaysia"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 13 Sep 2019]	

203	Broad climate suitability (environmental versatility)	y
-----	---	---

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	PlantUse English contributors. (2019). <i>Syzygium polyanthum</i> (PROSEA). <a href="https://uses.plantnet-project.org">https://uses.plantnet-project.org</a> . [Accessed 13 Sep 2019]	" <i>S. polyanthum</i> is widely distributed and locally common in lowland primary and secondary forest, also in thickets, bamboo forest and teak plantations, in Java up to 1000 m, in Sabah up to 1200 m, in Thailand up to 1300 m altitude."
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	[Elevation range exceeds 1000 m in tropical climates, demonstrating environmental versatility] "Climatic amplitude (estimates) - Altitude range: 10 - 1300 m - Mean annual rainfall: 1500 - 3600 mm - Rainfall regime: bimodal; uniform - Dry season duration: 0 - 6 months - Mean annual temperature: 26 - 31°C - Mean maximum temperature of hottest month: 24 - 33°C - Mean minimum temperature of coldest month: 12 - 31°C - Absolute minimum temperature: > 10°C"

<b>204</b>	<b>Native or naturalized in regions with tropical or subtropical climates</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 13 Sep 2019]	"Native Asia-Tropical INDO-CHINA: Indochina, Myanmar, Thailand MALESIA: Brunei Darussalam, Indonesia, [Kalimantan, Jawa, Sumatera] Malaysia"

<b>205</b>	<b>Does the species have a history of repeated introductions outside its natural range?</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	PlantUse English contributors. (2019). <i>Syzygium polyanthum</i> (PROSEA). <a href="https://uses.plantnet-project.org">https://uses.plantnet-project.org</a> . [Accessed 13 Sep 2019]	" <i>S. polyanthum</i> is widely distributed in Burma (Myanmar), Indo-China, Thailand, Malaysia, and Indonesia (Java, Sumatra, Kalimantan)." [No evidence of repeated introductions outside its natural range.]
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	Only listed as planted within its native range. Regions where cultivated and native include Java, Indonesia and Malaysia.

<b>301</b>	<b>Naturalized beyond native range</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	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. <a href="http://botany.si.edu/">http://botany.si.edu/</a> . [Accessed 13 Sep 2019]	No evidence to date

<b>302</b>	<b>Garden/amenity/disturbance weed</b>	<b>n</b>
------------	--	----------

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

303	Agricultural/forestry/horticultural weed	
	<b>Source(s)</b>	<b>Notes</b>
	Galinato, M.I., Moody, K. & Piggin, C.M. 1999. Upland rice weeds of south and southeast Asia. International Rice Research Institute, Los Baños, Philippines	Listed as a rice weed in Indonesia. Impacts unspecified

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

305	Congeneric weed	y
	<b>Source(s)</b>	<b>Notes</b>
	Weber, E. 2003. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Taxonomy unresolved, but both Eugenia and Syzygium genera have species that are invasive] "Eugenia uniflora: forms dense thickets that displace native plants and prevents their regeneration" ... "Syzygium jambos: It is invasive because it forms dense impenetrable thickets that expand rapidly. The dense canopies shade out almost all native species and lead to monospecific stands. The tree resprouts vigorously after damage."

401	Produces spines, thorns or burrs	n
	<b>Source(s)</b>	<b>Notes</b>
	PlantUse English contributors. (2019). <i>Syzygium polyanthum</i> (PROSEA). <a href="https://uses.plantnet-project.org">https://uses.plantnet-project.org</a> . [Accessed 13 Sep 2019]	[No evidence] "A medium-sized tree up to 30 m tall with dense crown, bole up to 60 cm in diameter, bark surface fissured and scaly, grey. Leaves opposite, simple, glabrous; petiole up to 12 mm long; blade oblong-elliptical, narrowly elliptical or lanceolate, 5-16 cm × 2.5-7 cm, with 6-11 pairs of secondary veins distinct below and a distinct intramarginal vein, dotted with minute oil glands. Inflorescence a panicle, 2-8 cm long, usually arising below the leaves, sometimes axillary, but trees flower very profusely. Flowers sessile, bisexual, regular, fragrant, white, in threes on ultimate branchlets of the panicle; calyx cup-shaped, about 4 mm long, with 4 broad persistent lobes; petals 4, free, 2.5-3.5 mm long, white; stamens numerous, arranged in 4 groups, about 3 mm long; disk quadrangular, orange-yellow. Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe."

402	Allelopathic	

Qsn #	Question	Answer
	Source(s)	Notes
	Singh, H. P., Batish, D. R., & Kohli, R. K. (2003). Allelopathic interactions and allelochemicals: new possibilities for sustainable weed management. <i>Critical Reviews in Plant Sciences</i> , 22(3-4): 239-311	[Unknown. Other <i>Syzygium</i> species possess allelopathic chemicals] "Tworkoski (2002) tested 25 plant-derived essential oils for herbicidal activity and found that those from red thyme ( <i>Thymus vulgaris</i> L.), summer savory ( <i>Satureja hortensis</i> L.), cinnamon ( <i>Cinnamomum zeylanicum</i> Blume), and clove ( <i>Syzygium aromaticum</i> [L.] Merr. et Perry) were most toxic, causing cell death due to rapid electrolyte leakage on the detached leaves of dandelion ( <i>Taraxacum officinale</i> Weber in Wiggers). Further, the application of 5 to 10% of these essential oils in combination with adjuvants caused the death of common lambsquarters, common ragweed, and johnsongrass within 1 day."

403	Parasitic	n
	Source(s)	Notes
	PlantUse English contributors. (2019). <i>Syzygium polyanthum</i> (PROSEA). <a href="https://uses.plantnet-project.org">https://uses.plantnet-project.org</a> . [Accessed 13 Sep 2019]	"A medium-sized tree up to 30 m tall with dense crown, bole up to 60 cm in diameter, bark surface fissured and scaly, grey." [Myrtaceae. No evidence]

Qsn #	Question	Answer
404	Unpalatable to grazing animals	
	Source(s)	Notes
	Nardelli, F. (2013). The mega-folivorous mammals of the Rainforest: feeding ecology in nature and in a controlled environment: A contribution to their conservation. International Zoo News 60(5): 323-339	[Palatable to rhinos] "Over 190 plant species from 61 families have been identified among this animal's food, 179 of them dicotyledons and only 11 monocotyledons, from rattan and pandanus palms to young bamboos, mangoes, and figs. Contrary to early supposition, there is no evidence that the rhino eats grasses, apart from bamboos. The four principal species eaten, 44 per cent of the total, are <i>Spondia pinnata</i> , an herbaceous <i>Amomum</i> species, <i>Leea sambucina</i> , and <i>Dillenia excelsa</i> . Other important plants are the climbers <i>Uncaria</i> species (possibly <i>U. ferrea</i> ), <i>Poikilospermum suaveolens</i> <i>Merremia vitifolia</i> , <i>Mikania cordata</i> , and <i>Lantana camara</i> with <i>Syzygium polyanthum</i> (Amman, 1985)."
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	[Unknown. Used by humans as a spice. Palatability to animals not mentioned among uses] "The aromatic leaves of salam, either fresh or dried, are used as a spice in many South-East Asian meat, fish, rice and vegetable dishes. Its use is comparable to that of laurel leaves (bay leaves) in European cuisine. The leaves are added early on and are left to cook with the dish, as the flavour develops only gradually. Ripe fruits are edible, although slightly astringent. Leaf and bark extracts are used medicinally against diarrhoea. Pounded leaves, bark and roots are applied as poultices against itches. The bark is used for tanning fishing-nets and for dyeing bamboo matting brown-red (for further blackening the matting is subsequently immersed in mud). Timber of <i>S. polyanthum</i> belongs to the trade group "kelat", which is a medium-weight to heavy hardwood. It is used for house building and furniture. "
	WRA Specialist. (2019). Personal Communication	Palatability unknown. Other <i>Syzygium</i> species are browsed by ungulates
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	Unknown. Fodder not listed among uses

405	Toxic to animals	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	[No toxicity reported] "A deciduous tropical tree with spreading branches and simple leaves, flowers pink, fruits round red and brown, ripe fruits edible although slightly astringent, bark used for dyeing purposes, dried brown leaves aromatic and somewhat sour used as a spice, timber used for house building and furniture"
	NIH U.S. National Library of Medicine. (2019). TOXNET Toxicology Data Network. <a href="https://toxnet.nlm.nih.gov/">https://toxnet.nlm.nih.gov/</a> . [Accessed 13 Sep 2019]	No evidence



Qsn #	Question	Answer
406	<b>Host for recognized pests and pathogens</b>	
	<b>Source(s)</b>	<b>Notes</b>
	PlantUse English contributors. (2019). <i>Syzygium polyanthum</i> (PROSEA). <a href="https://uses.plantnet-project.org">https://uses.plantnet-project.org</a> . [Accessed 13 Sep 2019]	"The tip-boring caterpillar <i>Argyroproce mormopa</i> may cause damage."
	WRA Specialist. (2019). Personal Communication	Unknown. A potential host of <i>Austropuccinia psidii</i> , as are other <i>Syzygium</i> species, but not documented to date

407	Causes allergies or is otherwise toxic to humans	n
	<b>Source(s)</b>	<b>Notes</b>
	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 toxicity reported. Used as a spice and medicinally] "A deciduous tropical tree with spreading branches and simple leaves, flowers pink, fruits round red and brown, ripe fruits edible although slightly astringent, bark used for dyeing purposes, dried brown leaves aromatic and somewhat sour used as a spice, timber used for house building and furniture" ... "Astringent, for stomachache, diarrhea and itchiness. Leaf and bark extracts used against diarrhea; pounded leaves, bark and roots applied as poultices against itches. Leaves antifungal and antibacterial, methanolic extracts show strong nematicidal activity against the pinewood nematode."
	NIH U.S. National Library of Medicine. (2019). TOXNET Toxicology Data Network. <a href="https://toxnet.nlm.nih.gov/">https://toxnet.nlm.nih.gov/</a> . [Accessed 13 Sep 2019]	No evidence

408	Creates a fire hazard in natural ecosystems	
	<b>Source(s)</b>	<b>Notes</b>
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	[Unknown. Occurs in relatively wet areas, but with a dry season] "Climatic amplitude (estimates) - Altitude range: 10 - 1300 m - Mean annual rainfall: 1500 - 3600 mm - Rainfall regime: bimodal; uniform - Dry season duration: 0 - 6 months"

409	Is a shade tolerant plant at some stage of its life cycle	y
	<b>Source(s)</b>	<b>Notes</b>
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	" This is a shade tolerant species and a good coppicer."
	PlantUse English contributors. (2019). <i>Syzygium polyanthum</i> (PROSEA). <a href="https://uses.plantnet-project.org">https://uses.plantnet-project.org</a> . [Accessed 13 Sep 2019]	"Natural regeneration is generally profuse and seedlings can survive under shade for several years. Wildlings should be hardened off in a nursery before being planted."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	<b>Source(s)</b>	<b>Notes</b>

Qsn #	Question	Answer
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	"Soil descriptors - Soil texture: medium - Soil drainage: free - Soil reaction: neutral - Special soil tolerances: infertile"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Medium-sized tree up to 30 m tall with dense crown, bole up to 60 cm in diameter; bark surface fissured and scaly, grey."

412	Forms dense thickets	n
	Source(s)	Notes
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"S. polyanthum is widely distributed and locally common in lowland primary and secondary forest, also in thickets," [Unknown if S. polyanthum forms thickets itself, or is a component of thicket vegetation]

501	Aquatic	n
	Source(s)	Notes
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	[Terrestrial] "S. polyanthum is widely distributed and locally common as understorey tree in lowland primary and secondary forests, also in thickets, bamboo forest and teak plantations, in Java up to 1000 m, in Sabah up to 1200 m, and in Thailand up to 1300 m altitude."

502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 13 Sep 2019]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Syzygieae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 13 Sep 2019]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Syzygieae

Qsn #	Question	Answer
504	<b>Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"A medium-sized tree up to 30 m tall with dense crown, bole up to 60 cm in diameter, bark surface fissured and scaly, grey."

601	<b>Evidence of substantial reproductive failure in native habitat</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	[No evidence] "S. polyanthum is widely distributed in Burma (Myanmar), Indo-China, Thailand, Malaysia, and Indonesia (Java, Sumatra, Kalimantan)."

602	<b>Produces viable seed</b>	y
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Salam is propagated by seed, cuttings or air layering. Wildlings can be collected from under adult trees. Seed loses its viability very rapidly and after 4-6 weeks it hardly germinates. Seed should be sown fresh from the fruit, on the surface of loose soil and under shade. It should not be buried, as this seriously reduces the germination percentage. Germination is rapid, starting 1-3 weeks after sowing, and is complete after 5-12 weeks. Natural regeneration is generally profuse and seedlings can survive under shade for several years. Wildlings should be hardened off in a nursery before being planted."

603	<b>Hybridizes naturally</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Brink, M., 2008. <i>Syzygium cordatum</i> Hochst. ex C.Krauss. In: Louppe, D., Oteng-Amoako, A.A. & Brink, M. (Editors). Prota 7(1): Timbers/Bois d'œuvre 1. [CD-Rom]. PROTA, Wageningen, Netherlands	[Unknown. Hybridization documented in genus] " <i>Syzygium cordatum</i> hybridizes with <i>Syzygium guineense</i> (Willd.) DC., and the 2 species are connected by a complete range of intermediates."

604	<b>Self-compatible or apomictic</b>	
	<b>Source(s)</b>	<b>Notes</b>

Qsn #	Question	Answer
	Soh, W. K. (2017). Taxonomy of <i>Syzygium</i> . In <i>The Genus Syzygium</i> (pp. 1-6). CRC Press, Boca Raton, FL	[Unknown. A variety of breeding systems have been documented in the genus] "The breeding biology of <i>Syzygium</i> has been understudied. Several studies showed that <i>Syzygium</i> are pollinated by birds, bats, and insects (bees, wasps, moths, ants, and spiders) and have low to high self-compatibility (Nic Lughadha and Proenca 1996; Parnell et al. 2007). Chantaranothai and Parnell (1994) showed that in <i>S. jambos</i> (L.) Alston, <i>S. megacarpum</i> (Craib) Rathakr. et N. C. Nair, and <i>S. samarangense</i> (Blume) Merr. et L. M. Perry, three breeding systems occur: apomictic, inbreeding (excluding apomixis), and outbreeding. Some species display inconsistent incidents of polyembryony, for example, <i>S. cumini</i> (L.) Skeels (Nic Lughadha and Proenca 1996). In short, there is no conclusive evidence indicating a general breeding trend in <i>Syzygium</i> , especially in regards to inbreeding or outbreeding."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). <i>Plant resources of South-East Asia, No.13. Spices</i> . Backhuys Publishers, Leiden, The Netherlands	"The flowers last for 4-7 days and are usually pollinated by beetles and butterflies."

606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	CAB International, 2005. <i>Forestry Compendium</i> . CAB International, Wallingford, UK	"Ability to regenerate rapidly; coppice" [Unknown if plants sucker or spread vegetatively]

607	Minimum generative time (years)	3
	Source(s)	Notes
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). <i>Plant resources of South-East Asia, No.13. Spices</i> . Backhuys Publishers, Leiden, The Netherlands	" <i>S. polyanthum</i> may flower as soon as 3 years old. Flowering and fruiting are more or less year round."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). <i>Plant resources of South-East Asia, No.13. Spices</i> . Backhuys Publishers, Leiden, The Netherlands	"Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe." [No evidence. No means of external attachment]

Qsn #	Question	Answer
702	<b>Propagules dispersed intentionally by people</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"S. polyanthum is often used for underplanting in forest plantations (teak, pine, kauri) to reduce excessive development of weeds. The leaves decay relatively slowly and provide large quantities of mulch."
	Sunshine Seeds. (2019). <i>Syzygium polyanthum</i> . <a href="http://www.sunshine-seeds.de">http://www.sunshine-seeds.de</a> . [Accessed 13 Sep 2019]	Seeds sold commercially

703	<b>Propagules likely to disperse as a produce contaminant</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe." [Unlikely. Fruit and seeds relatively large and unlikely to become an inadvertent seed contaminant. Seeds also lose viability rapidly]

704	<b>Propagules adapted to wind dispersal</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	[Fleshy-fruited] "Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe."

705	<b>Propagules water dispersed</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe." ... "S. polyanthum is widely distributed and locally common in lowland primary and secondary forest, also in thickets, bamboo forest and teak plantations," [No evidence. Not occurring in riparian areas or in close proximity to water]

706	<b>Propagules bird dispersed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Shono, K., Davies, S. J., & Kheng, C. Y. (2006). Regeneration of native plant species in restored forests on degraded lands in Singapore. <i>Forest Ecology and Management</i> , 237 (1-3), 574-582	"Appendix B " [ <i>Syzygium polyanthum</i> - Dispersal agent = birds and/or bats (B)]
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe."
	Wells, D. R. (2007). <i>The Birds of the Thai-Malay Peninsula</i> , Volume 2 Passerines. Christopher Helm, London	[Consumed by Glossy Starlings] "Their main food is tree fruit, pre-eminently the small figs of banyans. Other items identified are the berries of heavy-cropping <i>Endospermum moluccensis</i> , <i>Camnospermum auriculatum</i> and <i>Fagraea fragrans</i> , larger fruits of <i>Eugenia polyantha</i> (Corlett and Lucas 1989; C. J. Hails)"

Qsn #	Question	Answer
707	<b>Propagules dispersed by other animals (externally)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe." [No evidence. No means of external attachment]

708	<b>Propagules survive passage through the gut</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Shono, K., Davies, S. J., & Kheng, C. Y. (2006). Regeneration of native plant species in restored forests on degraded lands in Singapore. Forest Ecology and Management, 237 (1-3), 574-582	[Presumably yes. Bird-dispersed] "Appendix B " [Syzygium polyanthum - Dispersal agent = birds and/or bats (B)]

801	<b>Prolific seed production (&gt;1000/m2)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Fruit a 1-seeded berry, depressed globose to globose, up to 12 mm in diameter, dark red to purplish-black when ripe." [No evidence. Unlikely given 1-seeded fruit. Seeds also lose viability quickly and are therefore unlikely to accumulate high densities in the soil]

802	<b>Evidence that a persistent propagule bank is formed (&gt;1 yr)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Seed loses its viability very rapidly and after 4-6 weeks it hardly germinates. Seed should be sown fresh from the fruit, on the surface of loose soil and under shade. It should not be buried, as this seriously reduces the germination percentage. Germination is rapid, starting 1-3 weeks after sowing, and is complete after 5-12 weeks."
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	"Seed storage recalcitrant"

803	<b>Well controlled by herbicides</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Motooka, P., Castro, L., Nelson, D., Nagai, G. & Ching, L. 2003. Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide. CTAHR, UH Manoa, Honolulu, HI	[Herbicides effective on related invasive species <i>S. jambos</i> , so may also be effective on <i>S. polyanthum</i> ] "Sensitive to picloram applied cut surface and to glyphosate applied to drilled holes. Good control with triclopyr applied basal bark and cut-surface(30)."

Qsn #	Question	Answer
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	CAB International, 2005. Forestry Compendium. CAB International, Wallingford, UK	"Ability to regenerate rapidly; coppice"
	Guzman, C. C. de & Siemonsma, J. S. (eds.). (1999). Plant resources of South-East Asia, No.13. Spices. Backhuys Publishers, Leiden, The Netherlands	"Regular pruning seems to be tolerated. "

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Carnegie, A. J., & Lidbetter, J. R. (2012). Rapidly expanding host range for <i>Puccinia psidii</i> sensu lato in Australia. <i>Australasian Plant Pathology</i> , 41(1), 13-29	[Pathogen present in Hawaiian Islands. Impacts <i>Syzygium</i> and <i>Eugenia</i> species. Effects on <i>Syzygium polyanthum</i> unknown] "A rust affecting Myrtaceae was recently detected in New South Wales, Australia." ... "In Australia, <i>P. psidii</i> s.l. has currently been found on 107 host species in 30 genera during surveys, including species in <i>Angophora</i> , <i>Asteromyrtus</i> , <i>Austromyrtus</i> , <i>Backhousia</i> , <i>Callistemon</i> , <i>Chamelaucium</i> , <i>Choricarpia</i> , <i>Decaspermum</i> , <i>Eucalyptus</i> , <i>Eugenia</i> , <i>Gossia</i> , <i>Lenwebbia</i> , <i>Leptospermum</i> , <i>Lophomyrtus</i> , <i>Melaleuca</i> , <i>Metrosideros</i> , <i>Myrtus</i> , <i>Pilidiostigma</i> , <i>Rhodamnia</i> , <i>Rhodomyrtus</i> , <i>Ristantia</i> , <i>Stockwellia</i> , <i>Syncarpia</i> , <i>Syzygium</i> , <i>Tristania</i> , <i>Tristaniopsis</i> , <i>Ugni</i> , <i>Uromyrtus</i> and <i>Xanthostemon</i> . Species under cultivation (in nurseries and gardens) that are severely affected include <i>Gossia inophloia</i> , <i>Agonis flexuosa</i> , <i>Syzygium jambos</i> and <i>S. anisatum</i> while species that are severely damaged in native bushland include <i>Rhodamnia rubescens</i> , <i>Rhodomyrtus psidioides</i> , <i>Choricarpia leptopetala</i> and <i>Melaleuca quinquenervia</i> ."

**Summary of Risk Traits:**

High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Thrives in tropical climates (and could potentially spread in Hawaiian Islands)
- Reported as a weed of rice crops in Indonesia (but impacts unknown)
- Other *Syzygium* (and *Eugenia*) species are invasive
- Tolerates many soil types
- Reproduces by bird-dispersed seeds
- Reaches maturity in 3 years
- Able to coppice and resprout after cutting

Low Risk Traits

- No reports of invasiveness or naturalization, but no evidence of widespread introduction outside native range
- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- Valued as a spice, and used medicinally and for timber
- Recalcitrant seeds lose viability rapidly (will not form a persistent seed bank)

Second Screening Results for Tree/tree-like shrubs

- (A) Shade tolerant or known to form dense stands?> Yes. Tolerates shade  
(B) Bird or clearly wind-dispersed?> Yes. Dispersed by birds  
(C) Life cycle <4 years? Yes. Reaches maturity in 3 years  
Outcome = Reject (High Risk)