Taxon: Alternanthera brasiliana (L.) Kuntze

Family: Amaranthaceae

Common Name(s):
alligator weed
black night
bouton blanc
Brazilian joyweed
marguerite à fleurs rouges
perpetua-do-mato
purple joyweed
ruby leaf
stort papegojblad
upright calico plant

Synonym(s):
Achyranthes brasiliana (L.) Standl.
Alternanthera brasiliana f. angustifolia Kuntze
Alternanthera brasiliana var. longiseta Suess.
Alternanthera brasiliana var. straminea (Mart.) Suess.
Alternanthera dentata f. pubescens Suess.
Alternanthera dentata f. rubiginosa Suess.
Alternanthera dentata Scheygr.
Alternanthera moquinii var. grandiceps Suess.
Alternanthera straminea (Mart.) Suess.
Psilotrichum malaccense Suess.

Assessor: Chuck Chimera **Status:** Approved **End Date:** 29 May 2025

WRA Score: 14.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Scandent Shrub, Naturalized, Weedy, Water-Dispersed, Prolific Seeder

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	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n = question 205	y
302	Garden/amenity/disturbance weed		
303	Agricultural/forestry/horticultural weed		
304	Environmental weed	y = 2*multiplier (see Appendix 2), n = 0	y
305	Congeneric weed	y = 1*multiplier (see Appendix 2), n = 0	y
401	Produces spines, thorns or burrs	y = 1, n = 0	n
402	Allelopathic	y = 1, n = 0	n

Qsn #	Question	Answer Option	Answer
403	Parasitic	y = 1, n = 0	n
404	Unpalatable to grazing animals	y = 1, n = -1	n
405	Toxic to animals		
406	Host for recognized pests and pathogens	y = 1, n = 0	n
407	Causes allergies or is otherwise toxic to humans		
408	Creates a fire hazard in natural ecosystems	y = 1, n = 0	n
409	Is a shade tolerant plant at some stage of its life cycle	y = 1, n = 0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y = 1, n = 0	y
411	Climbing or smothering growth habit	y = 1, n = 0	n
412	Forms dense thickets	y = 1, n = 0	y
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	y = 1, n = -1	y
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y = 1, n = -1	y
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	y
706	Propagules bird dispersed	y = 1, n = -1	n
707	Propagules dispersed by other animals (externally)	y = 1, n = -1	n
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)	y = 1, n = -1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides	y = -1, n = 1	y
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y = 1, n = -1	y
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**
	Nicolson, D.H. (1991). Flora of Dominica, Part 2: Dicotyledoneae. Smithsonian Contributions to Botany, Number 77, 274 pp.	[No evidence of domestication] "Neotropics; common weed of disturbed places on Dominica: Cabrits Swamp (Whitefoord 4090), Clarke Hall (Chambers 2701, Ernst 1514, Nicolson 2000, Webster 13196), Grand Bay, (Ernst 1600), Pointe Michel (Eggers 566), above Roseau (Whitefoord 4649), St. Paul Parish (Cooley 8787), Sylvania area (Cooper 70, Hodge 1045,1251) ,sine loc. (Zway 49). Minor medicinal usage was reported by Adjanohoun et al. (1985:39, pl. 5)."

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. (2025). 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**
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Native from Mexico to Brazil and the West Indies; in Hawai'i known from a single collection made in 1973 at 300 m, ridge between Halawa Iki and Lamaloa gu1ches, north side of Halawa Valley, Moloka'i (Pekelo s.n., BISH), where it appears to be naturalized."

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Native from Mexico to Brazil and the West Indies; in Hawai'i known from a single collection made in 1973 at 300 m, ridge between Halawa Iki and Lamaloa gu1ches, north side of Halawa Valley, Moloka'i (Pekelo s.n., BISH), where it appears to be naturalized."

Qsn #	Question	Answer
203	**Broad climate suitability (environmental versatility)**	**y**
	Source(s)	**Notes**
	Tropicos.org. (2025). Tropicos v3.4.2. Missouri Botanical Garden. http://www.tropicos.org/. [Accessed 29 May 2025]	Collected from elevations of 150 m to 2500 m, and from latitudes of 14°24'S (150 m) to 17°49'S (2500 m)
	WRA Specialist. (2025). Personal Communication	It has become widely naturalized in diverse regions outside its native range, including the coastal districts of northern and eastern Australia, southeastern USA (Florida), South Africa (including Kruger National Park), numerous Pacific Islands (such as Hawaii, Niue, and Palau), India, Nigeria, Cuba, Kenya, and Vietnam. Its presence in these varied locations across multiple continents and islands demonstrates adaptability to different environments within tropical and subtropical zones.

204	**Native or naturalized in regions with tropical or subtropical climates**	**y**
	Source(s)	**Notes**
	Starr, F. & Starr, K. (2011). New plant records from Midway Atoll, Maui and Kahoʻolawe. Bishop Museum Occasional Papers. 110: 23-35	[Maui] "Alternanthera brasiliana (l.) kuntze New island record Alternanthera brasiliana (ruby leaf, Brazilian joyweed, alligator weed) is native from Mexico to Brazil and the West indies, and has been reported as naturalized in Hawaiʻi on Oʻahu (Wagner & Herbst 1995) and on Molokaʻi (Wagner et al. 1999). this upright plant with ruby red leaves and attractive small rounded spiky flowers is occasionally cultivated as a specimen or bedding plant. it occasionally escapes and is naturalized in south florida (USDA 2009). in Arkansas, all Alternanthera spp., including A. brasiliana, are listed as noxious weeds (USDA 2009). A. brasiliana is here reported as a new island record for Maui where it was observed spreading from cultivated plants in and around a botanical garden. Material examined: MAUI: east Maui, kula, enchanting floral Gardens of kula, a few patches and scattered individuals, germinating in hedges, appeared to be spreading, in association with a wide variety of ornamental plants in botanical garden, 2350 ft [716 m], 19 Feb 2008, Starr & Starr 080219-05."
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawaiʻi Press and Bishop Museum Press, Honolulu, HI.	[Molokaʻi] "Native from Mexico to Brazil and the West Indies; in Hawai'i known from a single collection made in 1973 at 300 m, ridge between Halawa Iki and Lamaloa gu1ches, north side of Halawa Valley, Moloka'i (Pekelo s.n., BISH), where it appears to be naturalized."
	Wagner, W.L. & Herbst, D.R. (1995). Contributions to the flora of Hawaii. IV. New records and name changes. Bishop Museum Occasional Paper 42: 13-27	[Oahu] "Alternanthera brasiliana (L.) Kuntze The following collection represents a new naturalized record of Alternanthera brasiliana on Oahu. Wagner et al. (1990: 183) list this species as also naturalized on Molokai. Material examined. Oahu: [Waianae Mountains] Pohakea Trail, 27 May 1982, E. Funk 406 (BISH)."

205	**Does the species have a history of repeated introductions outside its natural range?**	**y**
	Source(s)	**Notes**
	Queensland Government. (2025). Weeds of Australia - Alternanthera brasiliana. https://keyserver.lucidcentral.org/weeds/data/media/Html/alternanthera_brasiliana.htm. [Accessed 27 May 2025]	"Purple joyweed (Alternanthera brasiliana) is becoming widely naturalised in the coastal districts of northern and eastern Australia. It is relatively common in northern Queensland and the northern parts of the Northern Territory. Also naturalised in the coastal districts of central and southern Queensland and in the Kimberley region in northern Western Australia. Naturalised overseas in south-eastern USA (i.e. Florida), South Africa and on some Pascific islands (e.g. Hawaii, Niue and Palau)."

Qsn #	Question	Answer
301	Naturalized beyond native range	y
	Source(s)	**Notes**
	Queensland Government. (2025). Weeds of Australia - Alternanthera brasiliana. https://keyserver.lucidcentral.org/weeds/data/media/Html/alternanthera_brasiliana.htm. [Accessed 27 May 2025]	"Purple joyweed (Alternanthera brasiliana) is becoming widely naturalised in the coastal districts of northern and eastern Australia. It is relatively common in northern Queensland and the northern parts of the Northern Territory. Also naturalised in the coastal districts of central and southern Queensland and in the Kimberley region in northern Western Australia. Naturalised overseas in south-eastern USA (i.e. Florida), South Africa and on some Pascific islands (e.g. Hawaii, Niue and Palau)."
	Starr, F. & Starr, K. (2011). New plant records from Midway Atoll, Maui and Kahoʻolawe. Bishop Museum Occasional Papers. 110: 23-35	[Maui] "Alternanthera brasiliana (l.) kuntze New island record Alternanthera brasiliana (ruby leaf, Brazilian joyweed, alligator weed) is native from Mexico to Brazil and the West indies, and has been reported as naturalized in Hawaiʻi on Oʻahu (Wagner & Herbst 1995) and on Molokaʻi (Wagner et al. 1999). this upright plant with ruby red leaves and attractive small rounded spiky flowers is occasionally cultivated as a specimen or bedding plant. it occasionally escapes and is naturalized in south florida (USDA 2009). in Arkansas, all Alternanthera spp., including A. brasiliana, are listed as noxious weeds (USDA 2009). A. brasiliana is here reported as a new island record for Maui where it was observed spreading from cultivated plants in and around a botanical garden. Material examined: MAUI: east Maui, kula, enchanting floral Gardens of kula, a few patches and scattered individuals, germinating in hedges, appeared to be spreading, in association with a wide variety of ornamental plants in botanical garden, 2350 ft [716 m], 19 Feb 2008, Starr & Starr 080219-05."
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawaiʻi Press and Bishop Museum Press, Honolulu, HI.	[Molokaʻi] "Native from Mexico to Brazil and the West Indies; in Hawai'i known from a single collection made in 1973 at 300 m, ridge between Halawa Iki and Lamaloa gu1ches, north side of Halawa Valley, Moloka'i (Pekelo s.n., BISH), where it appears to be naturalized."
	Wagner, W.L. & Herbst, D.R. (1995). Contributions to the flora of Hawaii. IV. New records and name changes. Bishop Museum Occasional Paper 42: 13-27	[Oahu] "Alternanthera brasiliana (L.) Kuntze The following collection represents a new naturalized record of Alternanthera brasiliana on Oahu. Wagner et al. (1990: 183) list this species as also naturalized on Molokai. Material examined. Oahu: [Waianae Mountains] Pohakea Trail, 27 May 1982, E. Funk 406 (BISH)."

302	Garden/amenity/disturbance weed	
	Source(s)	**Notes**
	WeedScan. (2025). Purple alternanthera. https://weedscan.org.au/Weed?id=399. [Accessed 27 May 2025]	"Habitat: Roadsides, waste areas, urban areas, bushland edges, lawns."
	Missouri Botanical Garden. (2025). Alternanthera brasiliana 'Purple Prince'. https://www.missouribotanicalgarden.org/PlantFinder/. [Accessed 27 May 2025]	"Has the potential to become aggressive and weedy in the garden. Make sure this species is not a listed invasive in your area before planting."
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"It is often planted in borders and sometimes escapes from cultivation to become somewhat weedy."
	CQC Landcare Network. (2025). Red- leaved alternanthera Alternanthera brasiliana 'Rubiginosa'. https://cqclandcarenetwork.org.au/plants/red-leaved-alternanthera/. [Accessed 27 May 2025]	"Spread by: garden waste, self layers and grows from cuttings and seed. Invades/threats: environmentally sensitive areas with well drained but moist soils, creek lines, open forests and disturbed areas - particularly around garden waste dumping sites. Is capable of forming dense populations that dominate the ground layer. Still being used in horticulture. "

303	Agricultural/forestry/horticultural weed	

Qsn #	Question	Answer
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Pastures" [A few references also cite it as an agricultural weed]
	WRA Specialist. (2025). Personal Communication	Alternanthera brasiliana is primarily recognized as an environmental weed in certain regions, particularly in parts of Australia such as Queensland and the Northern Territory . It has a tendency to escape cultivation and establish itself in disturbed areas, including gardens and urban environments .

304	Environmental weed	y
	Source(s)	**Notes**
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"Brazilian Joyweed is spreading, outcompeting native species thereby threatening the ecosystem, and contravening the visual aesthetics of the Reserve." ... "Joyweed is regarded as an environmental weed in the Northern Territory (Smith 2011), as it is in northern Queensland and northern Western Australia. It has escaped cultivation and become naturalised, particularly along waterways in the warmer and wetter coastal areas of northern Australia. It is included in some environmental weed lists in eastern Queensland (e.g. in Ipswich City and in the Redland Shire) and is regarded as an emerging weed or ‘sleeper weed’ in the Katherine region (Queensland Government 2011). It is also seen as a threat to native ecosystems on Aboriginal lands in the Northern Land Council area (Smith 2002)."
	Queensland Government. (2025). Weeds of Australia - Alternanthera brasiliana. https://keyserver.lucidcentral.org/weeds/data/media/Html/alternanthera_brasiliana.htm. [Accessed 27 May 2025]	"Purple joyweed (Alternanthera brasiliana) is now regarded as an environmental weed in Queensland and the Northern Territory. This species is very common in cultivation as a garden ornamental and is often grown as a hedging plant. It has escaped cultivation and become naturalised, particularly along waterways in the warmer and wetter coastal areas of northern Australia. Several cultivars are available and these generally differ in the colour of their foliage. Alternanthera brasiliana 'Rubiginosa' (aka. Alternanthera brasiliana 'Ruby' or Alternanthera brasiliana 'Rubra') is probably the most common of these, in both cultivated and naturalised plants, and has reddish-purple coloured leaves. Purple joyweed (Alternanthera brasiliana) appears on some environmental weed lists in eastern Queensland (e.g. in Ipswich City and Redland Shire) and is regarded as an emerging weed or "sleeper weed" in the Katherine region in the Northern Territory. It is also seen as a threat to native plant ecosystems in aboriginal lands in the Northern Land Council area. This species is also listed as an alien invasive plant in the Kruger National Park in South Africa."

305	Congeneric weed	y
	Source(s)	**Notes**

Qsn #	Question	Answer
	Asif Tanveer, A. T., Abdul Khaliq, A. K., & Siddiqui, M. H. (2013). Review on genus Alternanthera weeds implications. Pakistan Journal of Weed Science Research 19(1): 53-58	"Alternanthera is a genus of approximately 200 low herbaceous plant species in Amaranthaceae, the amaranth family. The most problematic Alternanthera species which have been reported in the literature include A. angustifolia, A. denticulata, A. nana, A. nodiflora, A. sessilis, A. paronychioides, A. philoxeroides, A. punguns, A. tenella and A. triandra. Alternanthera philoxeroides, A. sessilis and A. punguns are the non native aquatic members that occur in Pakistan. Review of literature revealed A. philoxeroides as the most troublesome and extensively studied Alternanthera species in the world. Yield losses of 19-60% have been reported due to A. sessilis and A. philoxeroides in field crops. Alkaloids and phenols present in Alternanthera species inhibit the germination and early seedling growth of crops and vegetables. Fluchloralin, pendimethalin, penoxsulam and pretilachlor are recommended for control of various Alternanthera species in field crops. Dichlobenil, dichloform, fluridone, glyphosate, imazapyr and metsulfuron-methyl are recommended for control of A. philoxeroides in aquatic, semi-aquatic and terrestrial areas."
	Weber, E. (2017). Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Alternanthera philoxeroides] "The plant grows rapidly and forms dense mats of interwoven stems as a result of vegetative proliferation, making it one of the worst invaders of wet areas. A single plant can cover several square metres within a short period of time. Parts of floating mats can become detached from the main body of the weed mass and move freely in water currents, establishing new colonies (Parsons and Cuthbertson, 2001). Infestations impair water flow, crowd out native species, and alter water flow and light penetration in water bodies (Julien and Broadbent, 1980; Parsons and Cuthbertson, 2001; Basset et al., 2012). The weed mass promotes sedimentation and creates anaerobic conditions, it also provides habitat for disease vectors such as mosquitoes. Alligator weed is also a weed of rice fields and pastures prone to waterlogging (Parsons and Cuthbertson, 2001)."

401	Produces spines, thorns or burrs	n
	Source(s)	**Notes**
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Scandent shrubs 1.5-4 m tall; stems many-branched, subglabrous below, strigose to pilose in upper parts. Leaves narrowly ovate, usually 3-8 cm long, 1-2.5 cm wide, more or less strigose, apex acute or acuminate, base cuneate to rounded, petioles usually 0.3-1 cm long, strigose. Flowers in axillary and terminal cylindrical racemes 1.5 -2 cm long, peduncles usually 3-10 cm long, pubescent with appressed to spreading hairs, pedicels up to 2 mm long, bract ovate, ca. 3 mm long, apex acute or short-acuminate, midrib prominent, bracteoles longer than bract, more than " as long as flower, apex curved, conspicuously keeled with a prominent, irregularly dentate crest; sepals 5, subequal, lanceolate, 3-5 mm long, subglabrous to pubescent, 3-nerved, midnerve not excurrent; stamens 5, all fertile. Utricles 1.5-2 mm long"

Qsn #	Question	Answer
402	Allelopathic	n
	Source(s)	Notes
	Owoseni, O., & Awodoyin, R. O. (2013). Allelopathic effect of aqueous shoot and root extracts of Alternanthera brasiliana (L.) O. Kuntze on germination and seedling growth of Amaranthus cruentus L. and Zea mays L. Ibadan Journal of Agricultural Research, 9, 257-264	"The interference of Alternanthera brasiliana in the ecosystem may not be by allelopathy. Rather, its aqueous extract enhanced the performance of Amaranthus cruentus and Zea mays. The implication of the study may be that if Alternanthera brasiliana is used as a mulch material, it may not impede germination, but may enhance performance of crop in addition to other benefits of straw mulching." [While A. brasiliana contains phytochemicals (e.g., flavonoids), the study found no evidence of toxic allelopathy—instead, it may benefit nearby plants under certain conditions]

403	Parasitic	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Scandent shrubs 1.5-4 m tall; stems many-branched, subglabrous below, strigose to pilose in upper parts." [Amaranthaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Mako, A. A., Ikusika, O. O., & Akinmoladun, O. F. (2021). Physiological response of WAD sheep fed different combinations of Guinea grass and ensiled Alternanthera brasiliana (L.) O. Kuntze based diets: Intake, haematology and serum biochemical indices. Veterinary and Animal science, 14, 100220	"A. brasiliana (L.) O. Kuntze, an evergreen perennial plant, is an example of a browse species available in the tropics which can be used for feeding ruminants. Although it was originally found in the tropical and subtropical regions of Australia and South America (Duarte & Debur, 2004), it has become naturalized in tropical countries like Cuba, Nigeria, India, Kenya, Colombia and Vietnam (Sanchez-Del, 2012). Its alternative names, Brazilian joy weed, penicillin or Terracina, Joseph's coat, calico plant, and indoor clover, were due to its relative abundance in Brazil (Duarte & Debur, 2004; Macedo et al., 2004)."

Qsn #	Question	Answer
405	Toxic to animals	
	Source(s)	Notes
	McKenzie, R. (2020). Australia's Poisonous Plants, Fungi and Cyanobacteria: A Guide to Species of Medical and Veterinary Importance. CSIRO Publishing, Clayton South, VIC	"15 Digest of poisonous cyanobacteria, algae, slime moulds, macrofungi and plants in Australia" [Includes Alternanthera brasiliana - Toxin - Unidentified liver-damaging toxin; Animals at risk - Cats; Syndrome - Acute liver damage – one case on record]
	Mako, A. A., Ikusika, O. O., & Akinmoladun, O. F. (2021). Physiological response of WAD sheep fed different combinations of Guinea grass and ensiled Alternanthera brasiliana (L.) O. Kuntze based diets: Intake, haematology and serum biochemical indices. Veterinary and Animal science, 14, 100220	"A. brasiliana (L.) O. Kuntze, an evergreen perennial plant, is an example of a browse species available in the tropics which can be used for feeding ruminants. Although it was originally found in the tropical and subtropical regions of Australia and South America (Duarte & Debur, 2004), it has become naturalized in tropical countries like Cuba, Nigeria, India, Kenya, Colombia and Vietnam (Sanchez-Del, 2012). Its alternative names, Brazilian joy weed, penicillin or Terracina, Joseph's coat, calico plant, and indoor clover, were due to its relative abundance in Brazil (Duarte & Debur, 2004; Macedo et al., 2004)."
	Rankel, K. (2025). Brazilian Joyweed Is Not Toxic To Cats. https://greg.app/brazilian-joyweed-toxic-to-cats/. [Accessed 27 May 2025]	"Vets generally give Brazilian Joyweed a nod of approval, placing it in the 'unlikely to cause harm' category. It's like the plant version of a non-alcoholic beer – not entirely without effect, but nothing to lose sleep over. Still, keep your vet's number handy, because cats are individuals and can react in unexpected ways."
	WRA Specialist. (2025). Personal Communication	Conflicting reports of potential toxicity to cats. Used as animal feed

406	Host for recognized pests and pathogens	n
	Source(s)	Notes
	Missouri Botanical Garden. (2025). Alternanthera brasiliana 'Purple Prince'. https://www.missouribotanicalgarden.org/PlantFinder/. [Accessed 27 May 2025]	"Spider mites, trips, and fusarium wilt are potential problems. "
	WRA Specialist. (2025). Personal Communication	Alternanthera brasiliana is not identified as a key alternate host for plant pathogens or specialist pests in the available literature. Its primary ecological impacts relate to invasiveness and herbivory by generalist pests.

407	Causes allergies or is otherwise toxic to humans	
	Source(s)	Notes
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"On the other hand, there are some negative effects. Contact with the plant causes asthma and dermatitis in some people. I experience dermatitis when brushing my skin against the 'flowers', and interestingly, the symptoms seem to be exacerbated on repeated contact."
	WRA Specialist. (2025). Personal Communication	Alternanthera brasiliana is not toxic to humans but can cause skin irritation (dermatitis) and asthma in sensitive individuals upon contact.

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"Joyweed have prevented the regrowth of seedlings of native plants. Individual plants tolerate fires by resprouting from the base of the stem, so fire is not effective in killing Joyweed." [There is no direct evidence that Alternanthera brasiliana (Brazilian Joyweed) significantly increases fire hazards in natural ecosystems.]

Qsn #	Question	Answer
	WRA Specialist. (2025). Personal Communication	Currently, there is no substantial evidence indicating that Alternanthera brasiliana poses a fire hazard in natural ecosystems. However, its invasive nature and ability to form dense thickets suggest that ongoing monitoring is advisable, especially in regions prone to wildfires.

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	**Notes**
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"It is perennial, with individual plants living for at least 10 years (my estimation). Joyweed is an extreme opportunist, growing both in full sunshine on the margin of dry woodland and mown areas and under deep shade in closed-canopy forest."
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"partially shaded places are preferred"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	**Notes**
	Missouri Botanical Garden. (2025). Alternanthera brasiliana 'Purple Prince'. https://www.missouribotanicalgarden.org/PlantFinder/. [Accessed 27 May 2025]	"Easily grown in evenly moist, well-drained soils in full sun."
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"Joyweed is a lax, soft-stemmed, shallow-rooted, perennial herb. It grows in a variety of soil types and habitats."

411	Climbing or smothering growth habit	n
	Source(s)	**Notes**
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Scandent shrubs 1.5-4 m tall; stems many-branched, subglabrous below, strigose to pilose in upper parts."

412	Forms dense thickets	y
	Source(s)	**Notes**
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"In full sun and without support from neighbouring plants, Joyweed grows in a dense monospecific stand seldom exceeding 60 cm high. In contrast, in semi-shade and supported by the introduced Coffee Bush (Leucaena leucocephala) and/or the introduced vine Centro (Centrosema molle) and/or the native vine Supplejack (Flagellaria indica), it grows less densely but considerably taller (up to 2.5 m high)."

501	Aquatic	n
	Source(s)	**Notes**
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Scandent shrubs 1.5-4 m tall" [Terrestrial]

Qsn #	Question	Answer
502	Grass	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Amaranthaceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Amaranthaceae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Scandent shrubs 1.5-4 m tall; stems many-branched, subglabrous below, strigose to pilose in upper parts."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Queensland Government. (2025). Weeds of Australia - Alternanthera brasiliana. https://keyserver.lucidcentral.org/weeds/data/media/Html/alternanthera_brasiliana.htm. [Accessed 27 May 2025]	[No evidence] "Native to southern Mexico, Central America (i.e. Belize, Guatemala and Nicaragua), the Caribbean and tropical South America (i.e. French Guiana, Guyana, Surinam, Venezuela, Brazil, Colombia, Ecuador and eastern Peru). Naturalised Distribution Purple joyweed (Alternanthera brasiliana) is becoming widely naturalised in the coastal districts of northern and eastern Australia. It is relatively common in northern Queensland and the northern parts of the Northern Territory. Also naturalised in the coastal districts of central and southern Queensland and in the Kimberley region in northern Western Australia. Naturalised overseas in south-eastern USA (i.e. Florida), South Africa and on some Pascific islands (e.g. Hawaii, Niue and Palau)."

602	Produces viable seed	y
	Source(s)	Notes
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"From my observations it seems that the seeds most often germinate close to the parent plant where they fall in their 'cocoons' composed of tepals, but they are certainly also spread by floodwaters; perhaps the tepalar 'cocoons' are buoyant? The presence of adults does not prevent the germination of seedlings underneath them, so generally several generations will be found growing side by side."

603	Hybridizes naturally	
	Source(s)	Notes

Qsn #	Question	Answer
	WRA Specialist. (2025). Personal Communication	Unknown. There is no documented evidence that Alternanthera brasiliana naturally hybridizes with other species in the wild. While the genus Alternanthera comprises numerous species, and hybridization is a known phenomenon in some plant genera, specific instances of natural hybridization involving A. brasiliana have not been reported in scientific literature.

604	Self-compatible or apomictic	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Flowers in axillary and terminal, cylindrical racemes 1.5-2 cm long, peduncles usually 3-10 cm long, pubescent with appressed to spreading hairs, pedicels up to 2 mm long, bract ovate, ca. 3 mm long, apex acute or short-acuminate, midrib prominent, bracteoles longer than bract, more than 1\2 as long as flower, apex curved, conspicuously keeled with a prominent, irregularly dentate crest; sepals 5, subequal, lanceolate, 3-5 mm long, subglabrous to pubescent, 3-nerved, midnerve not excurrent; stamens 5, all fertile." [Unknown. The plant produces small, bisexual flowers. This morphology suggests potential for self-pollination, but cross-pollination may still dominate if mechanisms like protandry (anthers maturing before stigmas) exist.]

605	Requires specialist pollinators	n
	Source(s)	Notes
	Santos, G. M. de M., Aguiar, C. M. L., & Mello, M. A. R. (2010). Flower-visiting guild associated with the Caatinga flora: Trophic interaction networks formed by social bees and social wasps with plants. Apidologie, 41(4), 466-475	"Appendix 1 Plant species visited by social wasps and social bees in the caatinga of Itatim (Bahia State, Brasil)."[Lists Alternanthera brasiliana as a plant species visited by both social bees and social wasps.]
	Diniz, M. R., Silva, A. G., Correia, B. E. F., Almeida, J. E., & Rêgo, M. M. C. (2021). Síndrome de polinização das espécies de restinga no Delta do Parnaíba, Maranhão, Brasil. Pesquisas Botânica, 75(1), 197-221	"Tabela 1. Características florais e síndrome de polinização das espécies da restinga na Ilha Grande do Paulino, Tutóia, MA." [Classifies Alternanthera brasiliana as having a pollination syndrome of Melitofilia (Me). Melitofilia is the pollination of flowers by bees. This study notes that the plant has hermaphroditic flowers.]
	Penha, J. D. C. A., et al. (2025). Floristics of the herbaceous-shrub vegetation in the restinga of Araoca Beach, municipality of Guimarães, Maranhão, Northeast Brazil. Biota Neotropica, 25(1), e20241663.	"Table 2. List of herbaceous-shrub species recorded in the floristic survey with indication of origin, habit, and pollination and dispersal syndromes, in the restinga ecosystem of Araoca Beach, Guimarães, MA." [Classifies Alternanthera brasiliana's pollination syndrome as zoophilic, meaning it is pollinated by animals. This study found that zoophily was the predominant pollination type among the species recorded in that specific area.]

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"Vegetative growth frequently occurs at ground level from the base of the stem to produce a multi-stemmed shrub. The stems can develop adventitious roots from the nodes if they are covered with topsoil. Vegetative regrowth occurs readily from pieces of the stem that accidentally drop onto moist ground during the wet season, but it definitely does not occur during the dry season when the ground is rock-hard."

607	Minimum generative time (years)	

Qsn #	Question	Answer
	Source(s)	**Notes**
	PanAmerican Seed. (2025). Alternanthera Purple Prince. https://www.panamseed.com/Products/003300001010033/alternanthera-purple-prince/. [Accessed 29 May 2025]	"Seed supplied as: Raw. Plug crop time: 4 to 5 weeks Transplant to finish: 7 to 8 weeks" [While this is for cultivated plants, it suggests the plant has the genetic potential for rapid development within weeks or a few months.]
	WRA Specialist. (2025). Personal Communication	While an exact age for first reproductive maturity is not documented, the descriptions of rapid growth and early flowering on small plants suggest that Alternanthera brasiliana likely reaches reproductive maturity within its first year under favorable conditions.

701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y**
	Source(s)	**Notes**
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"additional spread has definitely occurred in patches that I liken to spot fires along the margin of the forest. It is likely that seeds are also moved by activities such as mowing and slashing, and even possibly transported by humans and dogs walking through the area."

702	**Propagules dispersed intentionally by people**	**y**
	Source(s)	**Notes**
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"Alternanthera brasiliana, without a well-known common name but sometimes called purple alternanthera, is native to Brazil but is cultivated for its dark purple foliage and white heads. It is much larger and darker than other ornamental alternantheras but is also much less commonly grown." ... "It is often planted in borders and sometimes escapes from cultivation to become somewhat weedy."

703	**Propagules likely to disperse as a produce contaminant**	**n**
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Major Pathway/s: Crop, Ornamental Dispersed by: Humans, Escapee"
	WRA Specialist. (2025). Personal Communication	While Alternanthera brasiliana can spread through various means, dispersal as a produce contaminant is not a significant pathway for this species.

704	**Propagules adapted to wind dispersal**	**n**
	Source(s)	**Notes**
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"I am certain that no spread of seeds occurs by wind as the reproductive portions (i.e. the cymes themselves and the tepalar ‘cocoons’) are quite heavy."

705	**Propagules water dispersed**	**y**
	Source(s)	**Notes**

Qsn #	Question	Answer
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"From my observations it seems that the seeds most often germinate close to the parent plant where they fall in their 'cocoons' composed of tepals, but they are certainly also spread by floodwaters; perhaps the tepalar 'cocoons' are buoyant? The presence of adults does not prevent the germination of seedlings underneath them, so generally several generations will be found growing side by side." ... "In the central western sections of the Casuarina Coastal Reserve with which I am familiar, the spread of Joyweed is mostly due to transport of seeds (inside their tepalar 'cocoons') when the ground is temporarily flooded during the wet season."

706	Propagules bird dispersed	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Dispersed by: Humans, Escapee"
	Wagner, W.L. & Herbst, D.R. (1995). Contributions to the flora of Hawaii. IV. New records and name changes. Bishop Museum Occasional Paper 42: 13-27	"Fruit an indehiscent flattened utricle. Seeds lenticular." [Not fleshy-fruited]

707	Propagules dispersed by other animals (externally)	n
	Source(s)	**Notes**
	Penha, J. D. C. A., et al. (2025). Floristics of the herbaceous-shrub vegetation in the restinga of Araoca Beach, municipality of Guimarães, Maranhão, Northeast Brazil. Biota Neotropica, 25(1), e20241663.	"Table 2. List of herbaceous-shrub species recorded in the floristic survey with indication of origin, habit, and pollination and dispersal syndromes, in the restinga ecosystem of Araoca Beach, Guimarães, MA." [In a restinga area in Maranhão, Brazil, the dispersal is listed as autochory (au)]
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1999). Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Utricles 1.5-2 mm long." [No means of external attachment]
	WRA Specialist. (2025). Personal Communication	There is currently no documented evidence that Alternanthera brasiliana seeds are externally dispersed by animals (epizoochory).

708	Propagules survive passage through the gut	
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Dispersed by: Humans, Escapee"
	Penha, J. D. C. A., et al. (2025). Floristics of the herbaceous-shrub vegetation in the restinga of Araoca Beach, municipality of Guimarães, Maranhão, Northeast Brazil. Biota Neotropica, 25(1), e20241663.	"Table 2. List of herbaceous-shrub species recorded in the floristic survey with indication of origin, habit, and pollination and dispersal syndromes, in the restinga ecosystem of Araoca Beach, Guimarães, MA." [In a restinga area in Maranhão, Brazil, the dispersal is listed as autochory (au)]
	WRA Specialist. (2025). Personal Communication	Although palatable to animals, currently, there is no documented evidence indicating that Alternanthera brasiliana (Brazilian joyweed) seeds are dispersed through ingestion and subsequent defecation by animals–a process known as endozoochory.

Qsn #	Question	Answer
801	**Prolific seed production (>1000/m2)**	y
	Source(s)	**Notes**
	Uwalaka, N. O., Borisade, T. V., & Westwood, R. (2025). The abundance of alien species is associated with the impact of Alternanthera brasiliana (L.) Kuntze on aboveground vegetation and soil seed bank in Ile-Ife, (Nigeria). Plant Ecology, 226: 265-278	"The dominant species in the invaded soil seed bank was A brasiliana with a density of 3579 ± 1208 seeds/m2, while in the uninvaded soil, it was a native species (Oldenlandia corymbosa) with a density of 15,369 ± 3622 seeds/m2 (Table 1)."

802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**
	Uwalaka, N. O., Borisade, T. V., & Westwood, R. (2025). The abundance of alien species is associated with the impact of Alternanthera brasiliana (L.) Kuntze on aboveground vegetation and soil seed bank in Ile-Ife, (Nigeria). Plant Ecology, 226: 265-278	"A. brasiliana which has a large seed production (approx. 15, 886 seeds per plant; Uwalaka 2019), has low seed dormancy (Uwalaka 2023) and small seed size, has a higher accumulation probability in the seed bank than many other resident species in the invaded plots. These features could mean that A. brasiliana has the potential of forming a persistent soil seed bank."
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"The question of seed viability remains open. Based on my 2012 trial removal (see below), I had concluded that the seeds can remain viable in the topsoil for no longer than one wet season, but the Internet site Pacific Island Ecosystems at Risk contains a communication from the experienced botanist Barbara Waterhouse that the seeds appear to have the ability to remain dormant for a long period (Institute of Pacific Islands Forestry 2010). The matter can be resolved by monitoring the plots in the Coastal Reserve from which flowering plants have been completely removed, which I intend to do."
	Pacific Island Ecosystems at Risk (PIER). (2025). Alternanthera brasiliana. http://www.hear.org/pier/species/alternanthera_brasiliana.htm. [Accessed 29 May 2025]	"The seeds appear to have the ability to remain dormant for a long period (Barbara Waterhouse, pers. com.)." [Longevity unspecified]

803	**Well controlled by herbicides**	y
	Source(s)	**Notes**
	Yang Zu, N. (1978). The use of mixtures of glyphosate with 2, 4-D, linuron and ammonium sulphate to control weeds in rubber plantations. BIOTROP Newsletter 23: 8	"Glyphosate is effective in controlling Axonopus compressus, Ottochloa nodosa, Paspalum conjugatum, Cyrtococcum patens, Oplimenus compositus, Borreria alata and Alternanthera brasiliana in immature and mature rubber plantations. Mixture of glyphosate with 2,4-D was synergistic at lower rates but antagonistic at higher ones. The effect of glyphosate was promoted by 2,4-D at early stages, but subsequently inhibited. Mixtures of glyphosate and 2,4-D caused considerable damage to A. compressus at lower rates but more time was required for the mixtures to give a 90-100% control. Ammonium sulphate (10 kg/ha) interacted synergistically with glyphosate (0.25-0.5 kg a.e./ha) and gave 50-80% inhibition of mixed vegetation in field experiments. Similar results were also shown in pot experiments. Linuron (0.5-1 kg/ha) interacted synergistically with glyphosate in giving 67-85% control of A. compressus and 80-100% control of B. Alata. Linuron alone at 1 kg/ha also gave 97% control of B. alata. As mixtures interacted synergistically at lower rates, control of mixed weeds in rubber plantations seems practical. It will be more practical to maintain tolerable weed populations rather than to kill all weeds and leave the ground open to invasion by more noxious weeds or susceptible to soil erosion."

804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Willan, R. C. (2014). Management of Brazilian Joyweed ('Alternanthera brasiliana') in the Casuarina Coastal Reserve, Darwin, Australia. Northern Territory Naturalist, 25, 18-28	"Joyweed have prevented the regrowth of seedlings of native plants. Individual plants tolerate fires by resprouting from the base of the stem, so fire is not effective in killing Joyweed."

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	Unknown

Summary of Risk Traits:

Alternanthera brasiliana, commonly known as Brazilian joyweed or purple joyweed, is a fast-growing herbaceous perennial or subshrub native to Mexico, Central and South America, and the West Indies. It typically grows up to 1 meter in height and is noted for its striking reddish to purple foliage, which contributes to its popularity as an ornamental groundcover in tropical and subtropical landscapes. The leaves are ovate and vibrantly colored in shades of burgundy or magenta. The plant produces small, clustered flowers that are white to greenish-white and relatively inconspicuous.

In addition to its ornamental use, A. brasiliana is also valued in traditional medicine across Latin America and parts of Asia, where it is used to treat inflammation, wounds, and gastrointestinal ailments. While the species produces seeds, it spreads primarily through vegetative means—stem fragments that readily root in moist soil. Its tolerance of a wide range of soils and environmental conditions makes it especially resilient and capable of naturalizing in disturbed or urban areas.

Alternanthera brasiliana has been introduced to various regions beyond its native range, including the Pacific Islands, Southeast Asia, and the southeastern United States. In Australia, it is classified as an environmental weed due to its ability to form dense ground cover, outcompete native vegetation, and threaten local ecosystems. In Hawaii, it has become naturalized on the islands of O‘ahu, Maui, and Moloka‘i, though its ecological impact there is currently considered limited.

High Risk / Undesirable Traits
• Broad elevation range (environmental versatility)
• Thrives and can spread in regions with tropical climates
• Naturalized O‘ahu, Maui, and Moloka‘i (Hawaiian Islands), Australia, south-eastern USA (i.e. Florida), South Africa and on some Pacific islands
• Aggressive and weedy in the garden
• An environmental weed in Australia
• Other Alternanthera species are invasive
• Can cause skin irritation (dermatitis) and asthma in sensitive individuals upon contact
• Shade tolerant
• Tolerates many soil types (not limited by substrate)
• Can form dense monospecific stands
• Reproduces by seed and vegetatively by stems and stem fragments
• Seeds dispersed by water, activities such as mowing and slashing, and through intentional cultivation
• Capable of prolific seed production
• Seeds may form a persistent seed bank (longevity unknown)
• Tolerates and resprouts after fire

Low Risk Traits
• Unarmed (no spines, thorns, or burrs)
• Palatable to animals
• Herbicides may provide effective control