

Taxon: <i>Aneilema beniniense</i> (P.Beauv.) Kunth	Family: Commelinaceae
Common Name(s): aneilema Benin aneilema Benin false spiderwort	Synonym(s): <i>Aneilema lujai</i> De Wild. & T. Durand <i>Aneilema mortehanii</i> De Wild. <i>Commelina beniniensis</i> P. Beauv.

Assessor: Chuck Chimera	Status: Approved	End Date: 11 Jun 2024
WRA Score: 10.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Perennial Herb, Naturalized, Crop Weed, Self-Compatible, Spreads Vegetatively

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	y
302	Garden/amenity/disturbance weed	y = 1*multiplier (see Appendix 2), n = 0	n
303	Agricultural/forestry/horticultural weed	y = 2*multiplier (see Appendix 2), n = 0	y
304	Environmental weed	y = 2*multiplier (see Appendix 2), n = 0	n
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		
403	Parasitic	y = 1, n = 0	n
404	Unpalatable to grazing animals	y = 1, n = -1	n
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	y = 1, n = 0	y

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		
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	y = 1, n = -1	y
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)		
702	Propagules dispersed intentionally by people	y = 1, n = -1	n
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal		
705	Propagules water dispersed		
706	Propagules bird dispersed	y = 1, n = -1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m ²)		
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
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Commelinaceae). <i>Smithsonian Contributions to Botany</i> 76: 1-166	No evidence of domestication in the genus
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2024). Personal Communication	NA
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2024). 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
	Friis, I., & Vollesen, K. (2005). <i>Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography.</i> Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	"General distribution: Senegal to Ethiopia, south to Angola and Zambia."
	KewScience. (2024). <i>Plants of the World Online - Aneilema beniniense.</i> http://powo.science.kew.org . [Accessed 31 May 2024]	"Native to: Angola, Benin, Burundi, Cameroon, Central African Repu, Chad, Congo, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Gulf of Guinea Is., Ivory Coast, Kenya, Liberia, Nigeria, Senegal, Sierra Leone, Sudan, Tanzania, Togo, Uganda, Zambia, Zaïre "
202	Quality of climate match data	High
	Source(s)	Notes
	KewScience. (2024). <i>Plants of the World Online - Aneilema beniniense.</i> http://powo.science.kew.org . [Accessed 31 May 2024]	"Native to: Angola, Benin, Burundi, Cameroon, Central African Repu, Chad, Congo, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Gulf of Guinea Is., Ivory Coast, Kenya, Liberia, Nigeria, Senegal, Sierra Leone, Sudan, Tanzania, Togo, Uganda, Zambia, Zaïre "
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Friis, I., & Vollesen, K. (2005). <i>Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography.</i> Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	[Distribution in low and mid elevation tropics] "General habitat range: in lowland and medium-altitude rain forest. General distribution: Senegal to Ethiopia, south to Angola and Zambia."
204	Native or naturalized in regions with tropical or subtropical climates	y

Qsn #	Question	Answer
	Source(s)	Notes
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	"Material examined. O'AHU: Lyon Arboretum, Mānoa, garden beds just N of main visitor parking lot, weed in flower beds, common weed in these beds only, not seen further back in arboretum, erect to 50 cm tall, rooting at nodes, petals 2, strongly clawed, very pale blue, almost white in color, 165 m, 21.333798, -157.803195, 29 Sep 2022, K. Faccenda 2717."
	KewScience. (2024). Plants of the World Online - <i>Aneilema beniniense</i> . http://powo.science.kew.org . [Accessed 31 May 2024]	"Native to: Angola, Benin, Burundi, Cameroon, Central African Repu, Chad, Congo, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Gulf of Guinea Is., Ivory Coast, Kenya, Liberia, Nigeria, Senegal, Sierra Leone, Sudan, Tanzania, Togo, Uganda, Zambia, Zaïre "

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	[No evidence] "A strange commelinaceous plant was found growing wild at Lyon Arboretum, where it was growing in weedy, wet, sunny areas in flower beds. Photographs were sent to Robert Faden (US), who graciously identified the plant as <i>Aneilema beniniense</i> , a species widespread across much of tropical Africa. It is unclear how it arrived at Lyon Arboretum, as it was never intentionally imported, according to the Arboretum's accession list."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Reported to be weedy within native range. No evidence of introduction outside native range] "Dispersed by: Humans Weed of: Cotton, Forestry, Orchards & Plantations, Pastures, Vegetables References: Nigeria-A-719, Ghana-A-2064, Nigeria-A-1360, Africa-A-1384, Republic of Congo-A-87, Nigeria-A-87, Nigeria-A-1853, Benin-W-2007, Nigeria-A-2067, Benin-A-2090."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	[Oahu] "Among the 24 new naturalized records reported herein, <i>Aneilema beniniense</i> , <i>Dracaena aubryana</i> , <i>Epidendrum calanthum</i> , <i>Galianthe brasiliensis</i> , <i>Hedychium greenii</i> , <i>Lobelia xalapensis</i> , and <i>Thalia geniculata</i> are reported as naturalized for the first time outside of their native range." ... "A strange commelinaceous plant was found growing wild at Lyon Arboretum, where it was growing in weedy, wet, sunny areas in flower beds. Photographs were sent to Robert Faden (US), who graciously identified the plant as <i>Aneilema beniniense</i> , a species widespread across much of tropical Africa. It is unclear how it arrived at Lyon Arboretum, as it was never intentionally imported, according to the Arboretum's accession list. In its native range it is described as abundant, especially in wet areas near watercourses or areas where sunlight reaches the forest floor (Morton 1966). Given that this species is quite competitive in its native range, and was growing as a rather aggressive weed at Lyon, it would be best to eradicate this species before it spreads further." ... "Material examined. O'AHU: Lyon Arboretum, Mānoa, garden beds just N of main visitor parking lot, weed in flower beds, common weed in these beds only, not seen further back in arboretum, erect to 50 cm tall, rooting at nodes, petals 2, strongly clawed, very pale blue, almost white in color, 165 m, 21.333798, -157.803195, 29 Sep 2022, K. Faccenda 2717."

302	Garden/amenity/disturbance weed	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	"A problem weed of plantation crops in the forest zone and widespread in West Africa."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Cited as an agricultural weed in a number of references] "Dispersed by: Humans Weed of: Cotton, Forestry, Orchards & Plantations, Pastures, Vegetables References: Nigeria-A-719, Ghana-A-2064, Nigeria-A-1360, Africa-A-1384, Republic of Congo-A-87, Nigeria-A-87, Nigeria-A-1853, Benin-W-2007, Nigeria-A-2067, Benin-A-2090."

303	Agricultural/forestry/horticultural weed	y
	Source(s)	Notes
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	"Given that this species is quite competitive in its native range, and was growing as a rather aggressive weed at Lyon, it would be best to eradicate this species before it spreads further." ... "Material examined. O'AHU: Lyon Arboretum, Mānoa, garden beds just N of main visitor parking lot, weed in flower beds, common weed in these beds only, not seen further back in arboretum, erect to 50 cm tall, rooting at nodes, petals 2, strongly clawed, very pale blue, almost white in color, 165 m, 21.333798, -157.803195, 29 Sep 2022, K. Faccenda 2717."
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	"Habitat: A problem weed of plantation crops in the forest zone and widespread in West Africa."
	Essandoh, P. K., Armah, F. A., Odoi, J. O., Yawson, D. O., & Afrifa, E. K. (2011). Floristic composition and abundance of weeds in an oil palm plantation in Ghana. ARPN Journal of Agricultural and Biological Science, 6(1), 20-31	"Table-4. Floristic composition of weeds in the oil palm plantation near Assin Edubiase." [Aneilema beniniense listed as a weed of oil palm plantations. Impacts unspecified]
	Tuo, K. F. A., Orega, Y. B., Kouame, K. B. J., Abo, K., & Agneroh, T. A. (2013). Characterization of weed flora in rubber trees plantations of Bongo (Côte d'Ivoire). Journal of Applied Biosciences, 70, 5544-5554	"The advantages of cover crop include fixation of atmospheric nitrogen, prevention of soil erosion, suppression of weed growth (particularly the grasses which emerge spontaneously after forest clearing). However, few weeds have a successful emergence in this group: Cecropia peltata L., Aneilema beniniense Kunth., Thaumatooccus daniellii Benn. and Panicum maximum Jacq. This situation is due to the fact that, as the cover plant and weeds compete for the same limited resources, when the cover plant establishes early, before the emergence of weeds its canopy covers the soil surface and creates a microenvironment that is not suitable for germination, emergence and growing of weeds. Conversely, when the emergence of the cover plant is delayed, weeds emerge."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Cotton, Forestry, Orchards & Plantations, Pastures, Vegetables References: Nigeria-A-719, Ghana-A-2064, Nigeria-A-1360, Africa-A-1384, Republic of Congo-A-87, Nigeria-A-87, Nigeria-A-1853, Benin-W-2007, Nigeria-A-2067, Benin-A-2090."

304	Environmental weed	n
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	"A problem weed of plantation crops in the forest zone and widespread in West Africa."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Agricultural weed] "Weed of: Cotton, Forestry, Orchards & Plantations, Pastures, Vegetables References: Nigeria-A-719, Ghana-A-2064, Nigeria-A-1360, Africa-A-1384, Republic of Congo-A-87, Nigeria-A-87, Nigeria-A-1853, Benin-W-2007, Nigeria-A-2067, Benin-A-2090."

Qsn #	Question	Answer
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	[Botanical garden weed] "In its native range it is described as abundant, especially in wet areas near watercourses or areas where sunlight reaches the forest floor (Morton 1966). Given that this species is quite competitive in its native range, and was growing as a rather aggressive weed at Lyon, it would be best to eradicate this species before it spreads further."

305	Congeneric weed	y
	Source(s)	Notes
	Kwon, O. D., Shin, H. R., Park, T. D., Guh, J. O., & Lim, J. S. (1996). Control of spiderwort (<i>Aneilema keisak</i> Hassk) in no-tillage rice. <i>Korean Journal of Weed Science</i> , 16(2), 100-107	"Pre- and post-emergent control of <i>Aneilema keisak</i> was investigated in no-till paddy fields. In addition, a pot trial was conducted to determine use rates of the experimental post-emergent herbicide LGC40863. For pre-emergent control, butachlor(1,800g ai/ha), pretilachlor(600g ai/ha), pretilachlor plus pyrazosulfuron(300+18g ai/ha, respectively), thiobencarb plus bensulfuron(2,100+51g ai/ha, respectively), and molinate plus pyrazosulfuron(1,500+21g ai/ha, respectively) were treated at 20 days before seeding. Among the herbicides, molinate plus pyrazosulfuron was the least effective (23% control), while all other herbicides provided excellent(>95%) control of <i>A. keisak</i> . None of these herbicides caused rice phytotoxicity. However, rice yield in the plot treated with molinate plus pyrazosulfuron decreased about 50% due to poor <i>A. keisak</i> control. LGC40863 controlled <i>A. keisak</i> completely, by foliar application, across wide growth stages from the 5- to 15-leaf at 50g ai/ha in pot tests. In the field, treatment of LGC40863(30 to 50g ai/ha) provided >95% control of <i>A. keisak</i> when treated either at 15 days after transplanting or at non-productive tillering stage. Efficacy of 2,4-D and bentazon was insufficient when treated at non-productive tillering stage. These results suggest that, in no-till paddy fields, <i>A. keisak</i> is controlled by pre-emergent application of butachlor, pretilachlor, pretilachlor plus pyrazosulfuron, or thiobencarb plus bensulfuron, and by post-emergent application of LGC40863. "
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	[The two species below, and several others, are cited as weeds of agriculture] " <i>Aneilema lanceolatum</i> Benth. Commelinaceae Total N° of Refs: 1 Preferred Climate/s: Tropical Weed of: Cereals References: Burkina Faso-A-2068." " <i>Aneilema vitiense</i> Seem. Commelinaceae Total N° of Refs: 2 Preferred Climate/s: Tropical Weed of: Bananas, Orchards and Plantations References: Philippines-W-412, Philippines-A-87."

401	Produces spines, thorns or burrs	n
	Source(s)	Notes

Qsn #	Question	Answer
	Faden, R. (2012). Flora of tropical East Africa, Commelinaceae. Royal Botanic Gardens, Kew	[No evidence] "Perennial, decumbent, rooting at the nodes; roots thin, fibrous; shoots erect to ascending, (15-)40-130 cm tall, densely branched below, usually unbranched distally, glabrous. Leaves spirally arranged; sheaths 1-4 cm long, glabrous or very sparsely puberulous along the fused edge distally, sparsely ciliolate or eciliolate at apex; lamina (sub-) petiolate, narrowly lanceolate to elliptic, (5-)7-15(-18.5) × (1.2-)2-5(-6.7) cm, base cuneate to ± rounded, margins scabrid distally, apex acuminate; both surfaces glabrous or the abaxial sparsely puberulous. Thyrses terminal and occasionally on a short shoot from a distal leaf or inflorescence bract, very dense, ovoid or cylindrical, 2-6 × 1.5-6 cm, of (10-)18-55 ascending cincinni (or the lowest patent); inflorescence axes glabrous or sparsely puberulous; peduncles 2-4 cm long with a bract halfway; cincinni to 3 cm long and 9-flowered; bracteoles cup-shaped, perfoliate, prominently glandular subapically, glabrous. Flower bisexual and male, 7-10(-13) mm wide; pedicels 3-6 mm long in flower, 4- 7 mm long and erect to strongly recurved in fruit, glabrous. Sepals with the medial slightly larger, green or greenish white, ovate or elliptic, 2-3 × 2-2.5 mm, convexoconcave, hooded apically, glandular subapically, glabrous; paired petals white or pale lilac, lavender or violet, 4-5 × 2.5-4 mm of which the claw 1-1.5 mm long; medial petal white or greenish white, ovate or broadly ovate, 3-4 × 2-3 mm; staminodes 2-3, yellow, antherode bilobed; lateral stamens with filaments 3.5-5 mm long, sigmoid, sparsely bearded, anthers 0.8-1 mm long; medial stamen filament 3-3.5 mm long, anther 0.8-0.9 mm. Ovary 1.5-2 × 1 mm, glabrous; style arcuate-descending, ± 4 mm long; stigma capitellate. Capsules dark brown or greybrown, oblong-ellipsoid, (4.5-)5-7 × 2.5-3.5 mm, bi- or trilocular, bivalved, glabrous; dorsal locule 0-1-seeded, ventral locules (1-)2-3-seeded. Ventral locule seeds broadly ovoid to reniform, 1.3-2.4 × 1.2-1.8 mm, testa pinkish brown, orange-brown or grey."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2024). Personal Communication	Unknown

403	Parasitic	n
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	"A perennial herb with fleshy stems up to 90 cm high." [Commelinaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes

Qsn #	Question	Answer
	Gaullier, P. (1990). Cattle rearing on industrial oil palm plantations in Cameroon. I. Study of the flora and biomass determination. <i>Revue d'Élevage et de Médecine Vétérinaire des Pays Tropicaux</i> , 43(3), 401-408	[Reported to be nutritious and presumably palatable to cattle] "Changes in the flora of an industrial oil palm grove in Cameroon used to raise N'Dama cattle since 1979 were studied in 1983-84. The original sown <i>Pueraria phaseoloides</i> var. <i>javanica</i> was mainly replaced by grasses, including <i>Acroceras amplexans</i> , <i>Andropogon gayanus</i> , <i>Brachiaria mutica</i> , <i>Digitaria horizontalis</i> , <i>Eleusine indica</i> , <i>Panicum</i> spp., <i>Pennisetum</i> spp., <i>Perotis indica</i> , <i>Setaria megaphylla</i> , <i>Sporobolus pyramidalis</i> , <i>Paspalum</i> spp. and <i>Schizachyrium</i> spp. They were located between the tree rows and at the edge of the plots representing 5% of the surface cover. Other monocots included <i>Cyperus</i> spp. and the more nutritious <i>Aneilema beniniense</i> and <i>Commelina</i> spp. There were also dicots, ferns and woody species present. The amount of biomass available to cattle ranged from 12.9 to 78.0% of the total (average 45.8%). The influence of palm tree management and the original features of the plantation on biomass production are discussed."

405	Toxic to animals	n
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2024). <i>Aneilema beniniense</i> . https://tropical.theferns.info/viewtropical.php?id=Aneilema+beniniense . [Accessed 10 Jun 2024]	"Known Hazards None known"
	Quattrocchi, U. (2012). <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	[No evidence. Used medicinally by people] "Sudorific steam bath for feverish diseases. Sap from the plant given to women suffering from amenorrhea. Herb in fetish groves."

406	Host for recognized pests and pathogens	n
	Source(s)	Notes
	CABI. (2024). <i>Aneilema beniniense</i> . CABI Compendium. https://www.cabidigitallibrary.org/doi/10.1079/cabicompendium.87143875 . [Accessed 10 Jun 2024]	"Host of (source-data mining) African cassava mosaic virus (African cassava mosaic)" [Importance unknown]

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2024). <i>Aneilema beniniense</i> . https://tropical.theferns.info/viewtropical.php?id=Aneilema+beniniense . [Accessed 10 Jun 2024]	"Known Hazards None known"
	Quattrocchi, U. (2012). <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	[No evidence. Used medicinally by people] "Sudorific steam bath for feverish diseases. Sap from the plant given to women suffering from amenorrhea. Herb in fetish groves."

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Quattrocchi, U. (2012). <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	[Succulent. No evidence] "Herbaceous, succulent, weed, erect, scandent, semi-decumbent, creeping, straggling, sprawling, rooting at lower nodes"

409	Is a shade tolerant plant at some stage of its life cycle	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Friis, I., & Vollesen, K. (2005). Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	"shaded old road in forest" [Found in shaded habitat]
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	Notes
	Friis, I., & Vollesen, K. (2005). Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	"on rocky outcrop with wet flushes and thin soil"
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	[Probably not substrate limited] "Habitat: A problem weed of plantation crops in the forest zone and widespread in West Africa."
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Faden, R. (2012). Flora of tropical East Africa, Commelinaceae. Royal Botanic Gardens, Kew	"Perennial, decumbent, rooting at the nodes; roots thin, fibrous; shoots erect to ascending, (15-)40-130 cm tall, densely branched below, usually unbranched distally, glabrous."
412	Forms dense thickets	
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	[Unknown. Weedy, and may exclude or outcompete other vegetation] "A perennial herb with fleshy stems up to 90 cm high. It reproduces from seeds and vegetatively from creeping stems." ... "A problem weed of plantation crops in the forest zone and widespread in West Africa."
501	Aquatic	n
	Source(s)	Notes
	Friis, I., & Vollesen, K. (2005). Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	[Terrestrial] "General habitat range: in lowland and medium-altitude rain forest."
502	Grass	n
	Source(s)	Notes
	KewScience. (2024). Plants of the World Online - <i>Aneilema beniniense</i> . http://powo.science.kew.org . [Accessed 10 Jun 2024]	Commelinaceae

Qsn #	Question	Answer
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	KewScience. (2024). Plants of the World Online - <i>Aneilema beniniense</i> . http://powo.science.kew.org . [Accessed 10 Jun 2024]	Commelinaceae
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Faden, R. (2012). Flora of tropical East Africa, Commelinaceae. Royal Botanic Gardens, Kew	"Perennial, decumbent, rooting at the nodes; roots thin, fibrous; shoots erect to ascending, (15-)40-130 cm tall, densely branched below, usually unbranched distally, glabrous."
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Friis, I., & Vollesen, K. (2005). Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	[No evidence] "General distribution: Senegal to Ethiopia, south to Angola and Zambia."
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Commelinaceae). Smithsonian Contributions to Botany 76: 1-166	[No evidence] "The section is mainly centered in western Africa, and it includes several widespread species that are morphologically and cytologically diverse, e.g., <i>A. beniniense</i> , <i>A. umbrosum</i> , and <i>A. welwitschii</i> . Section <i>Brevibarbata</i> comprises four species groups: a western African forest group (<i>A. beniniense</i> , <i>A. silvaticum</i> , <i>A. umbrosum</i> , and west African <i>A. dispernum</i> , which is probably distinct from the eastern African plant of the same name"
602	Produces viable seed	y
	Source(s)	Notes
	Tropical Plants Database, Ken Fern. (2024). <i>Aneilema beniniense</i> . https://tropical.theferns.info/viewtropical.php?id=Aneilema+beniniense . [Accessed 10 Jun 2024]	"Propagation Seed -"
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	[<i>Aneilema beniniense</i>] "A perennial herb with fleshy stems up to 90 cm high. It reproduces from seeds and vegetatively from creeping stems."
603	Hybridizes naturally	
	Source(s)	Notes
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Commelinaceae). Smithsonian Contributions to Botany 76: 1-166	[Unknown. Other hybrids documented in genus] "One naturally occurring hybrid is also newly recognized."
604	Self-compatible or apomictic	y
	Source(s)	Notes

Qsn #	Question	Answer
	Morton, J. K. (1967). The Commelinaceae of West Africa: a biosystematic survey. Botanical Journal of the Linnean Society, 60(382), 167-221	"Probably of greatest significance is their breeding system. The flower structure and pollination mechanism are unspecialized. Pollination depends largely on the visits of a wide range of small insects. Those species which have been studied in detail are all self-compatible. From their floral structure and behaviour under cultivation there is good reason to believe that this applies to most of the weedy species occurring in West Africa. Though self-compatible, several of these plants-e.g. the Aneilemas and Commelinas, produce male as well as hermaphrodite flowers in each inflorescence. In the latter genus the male flowers of each spathe open before the female. Hence cross-pollination is favoured."
	Kubitzki, K. (ed.). (1998). The Families and genera of vascular plants. Volume IV. Flowering plants, Monocotyledons: Alismatanae and Commelinanae (except Gramineae). Springer-Verlag, Berlin, Heidelberg, New York	"The short anthesis allows related species to occur sympatrically without crossing. This is true in <i>Aneilema</i> (Faden 1983, 1991) and <i>Stanfieldiella</i> , and is likely also to be the case in <i>Palisota</i> , <i>Polyspatha</i> , and other genera."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Morton, J. K. (1967). The Commelinaceae of West Africa: a biosystematic survey. Botanical Journal of the Linnean Society, 60(382), 167-221	" <i>Aneilema paludosum</i> and <i>beniniense</i> , <i>Floscopa glomerata</i> , together with several species of <i>Commelina</i> , are common weeds in many parts of West Africa. What features, if any, do these and other weedy members of the family have in common which may have contributed to their success as weeds? Probably of greatest significance is their breeding system. The flower structure and pollination mechanism are unspecialized. Pollination depends largely on the visits of a wide range of small insects. Those species which have been studied in detail are all self-compatible."

606	Reproduction by vegetative fragmentation	y
	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	"Herbaceous, succulent, weed, erect, scandent, semi-decumbent, creeping, straggling, sprawling, rooting at lower nodes"
	Holland, J. H. (1922). The Useful Plants of Nigeria: Including Plants Suitable for Cultivation in West Africa and Other Tropical Dependencies of the British Empire (Vol. 9). HM Stationery Office, London	"Stem trailing, 1-2 ft. long, rooting near the base." [Roots along stems like other members of the Commelinaceae]
	Faden, R. (2012). Flora of tropical East Africa, Commelinaceae. Royal Botanic Gardens, Kew	[Presumably yes. Roots at nodes] "Perennial, decumbent, rooting at the nodes; roots thin, fibrous; shoots erect to ascending,"

607	Minimum generative time (years)	
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	[As a herb, probably between <1 years to 2 years before maturity] "A perennial herb with fleshy stems up to 90 cm high. It reproduces from seeds and vegetatively from creeping stems."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Commelinaceae). Smithsonian Contributions to Botany 76: 1-166	"There are no published data on seed dispersal in <i>Aneilema</i> . In general, the capsules and seeds do not show any clear adaptations for dispersal"

Qsn #	Question	Answer
	Faden, R. (2012). Flora of tropical East Africa, Commelinaceae. Royal Botanic Gardens, Kew	[Small seeds could potentially be dispersed in mud attached to footwear, vehicles or equipment] "Ventral locule seeds broadly ovoid to reniform, 1.3-2.4 × 1.2-1.8 mm, testa pinkish brown, orange-brown or grey."

702	Propagules dispersed intentionally by people	n
	Source(s)	Notes
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	"It is unclear how it arrived at Lyon Arboretum, as it was never intentionally imported, according to the Arboretum's accession list."
	WRA Specialist. (2024). Personal Communication	No evidence of intentional cultivation, although it is used medicinally within its native range

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	[Possibly dispersed as a contaminant of other crops] "It reproduces from seeds and vegetatively from creeping stems." ... "A problem weed of plantation crops in the forest zone and widespread in West Africa."

704	Propagules adapted to wind dispersal	
	Source(s)	Notes
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Comelinaceae). Smithsonian Contributions to Botany 76: 1-166	"There are no published data on seed dispersal in <i>Aneilema</i> . In general, the capsules and seeds do not show any clear adaptations for dispersal."
	Kirchmair, I., Schmidt, M., Zizka, G., Erpenbach, A., & Hahn, K. (2012). Biodiversity islands in the Savanna: analysis of the phytodiversity on termite mounds in northern Benin. <i>Flora et Vegetatio Sudano-Sambesica</i> , 15, 3-14	[Reported to be wind dispersed, although seed morphology and habit make this improbable] "Appendix S1. Plant taxa on 57 termitaria, surrounding and adjacent savanna plots in W National Park, North Benin. " [<i>Aneilema beniniense</i> - dispersal mode = an=anemochorous]

705	Propagules water dispersed	
	Source(s)	Notes
	Friis, I., & Vollesen, K. (2005). Flora of the Sudan-Uganda Border Area East of the Nile: Catalogue of vascular plants, 2nd pt. Vegetation and phytogeography. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	"on rocky outcrop with wet flushes and thin soil with <i>Selaginella njamnjamensis</i> , <i>Aeollanthus</i> spp., <i>Aloe</i> sp. and many annuals, along small brook between rocks,"
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	[Probably dispersed by water when growing in riparian habitats] "In its native range it is described as abundant, especially in wet areas near watercourses or areas where sunlight reaches the forest floor (Morton 1966)."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Comelinaceae). Smithsonian Contributions to Botany 76: 1-166	[Not fleshy-fruited] "There are no published data on seed dispersal in <i>Aneilema</i> . In general, the capsules and seeds do not show any clear adaptations for dispersal."

707	Propagules dispersed by other animals (externally)	

Qsn #	Question	Answer
	Source(s)	Notes
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Commelinaceae). <i>Smithsonian Contributions to Botany</i> 76: 1-166	"There are no published data on seed dispersal in <i>Aneilema</i> . In general, the capsules and seeds do not show any clear adaptations for dispersal."
	Faden, R. (2012). <i>Flora of tropical East Africa</i> , Commelinaceae. Royal Botanic Gardens, Kew	"Ventral locule seeds broadly ovoid to reniform, 1.3-2.4 × 1.2-1.8 mm" [Small seeds could adhere to animal fur or feet in mud]

708	Propagules survive passage through the gut	
	Source(s)	Notes
	Faden, R. B. (1991). The morphology and taxonomy of <i>Aneilema</i> R. Brown (Commelinaceae). <i>Smithsonian Contributions to Botany</i> 76: 1-166	[Unknown] "There are no published data on seed dispersal in <i>Aneilema</i> . In general, the capsules and seeds do not show any clear adaptations for dispersal."

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Faden, R. (2012). <i>Flora of tropical East Africa</i> , Commelinaceae. Royal Botanic Gardens, Kew	"Capsules dark brown or grey-brown, oblong-ellipsoid, (4.5-)5-7 × 2.5-3.5 mm, bi- or trilocular, bivalved, glabrous; dorsal locule 0-1-seeded, ventral locules (1-)2-3-seeded. Ventral locule seeds broadly ovoid to reniform, 1.3-2.4 × 1.2-1.8 mm, testa pinkish brown, orange-brown or grey."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	WRA Specialist. (2024). Personal Communication	Unknown

803	Well controlled by herbicides	
	Source(s)	Notes
	Kwon, O. D., Shin, H. R., Park, T. D., Guh, J. O., & Lim, J. S. (1996). Control of spiderwort (<i>Aneilema keisak</i> Hassk) in no-tillage rice. <i>Korean Journal of Weed Science</i> , 16(2), 100-107	[Unknown. Herbicides effective on other species in genus] "Pre- and post-emergent control of <i>Aneilema keisak</i> was investigated in no-till paddy fields. In addition, a pot trial was conducted to determine use rates of the experimental post-emergent herbicide LGC40863. For pre-emergent control, butachlor(1,800g ai/ha), pretilachlor(600g ai/ha), pretilachlor plus pyrazosulfuron(300+18g ai/ha, respectively), thiobencarb plus bensulfuron(2,100+51g ai/ha, respectively), and molinate plus pyrazosulfuron(1,500+21g ai/ha, respectively) were treated at 20 days before seeding. Among the herbicides, molinate plus pyrazosulfuron was the least effective (23% control), while all other herbicides provided excellent(>95%) control of <i>A. keisak</i> . None of these herbicides caused rice phytotoxicity. However, rice yield in the plot treated with molinate plus pyrazosulfuron decreased about 50% due to poor <i>A. keisak</i> control. LGC40863 controlled <i>A. keisak</i> completely, by foliar application, across wide growth stages from the 5 - to 15-leaf at 50g ai/ha in pot tests. In the field, treatment of LGC40863(30 to 50g ai/ha) provided >95% control of <i>A. keisak</i> when treated either at 15 days after transplanting or at non-productive tillering stage. Efficacy of 2,4-D and bentazon was insufficient when treated at non-productive tillering stage. These results suggest that, in no-till paddy fields, <i>A. keisak</i> is controlled by pre-emergent application of butachlor, pretilachlor, pretilachlor plus pyrazosulfuron, or thiobencarb plus bensulfuron, and by post-emergent application of LGC40863. "

Qsn #	Question	Answer
804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Agyakwa, C.W. & Akobundu, I.O. (1998). A Handbook of West African Weeds. International Institute of Tropical Agriculture, Ibadan, Nigeria	[Unknown. Ability to reproduce vegetatively may confer some tolerance to mechanical control methods] "It reproduces from seeds and vegetatively from creeping stems."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Faccenda, K. (2024). Report of 24 new naturalized weeds across the islands of Hawai'i. Bishop Museum Occasional Papers 156: 71-110	[Unknown] "A strange commelinaceous plant was found growing wild at Lyon Arboretum, where it was growing in weedy, wet, sunny areas in flower beds. Photographs were sent to Robert Faden (US), who graciously identified the plant as <i>Aneilema beniniense</i> , a species widespread across much of tropical Africa. It is unclear how it arrived at Lyon Arboretum, as it was never intentionally imported, according to the Arboretum's accession list."

Summary of Risk Traits:

Aneilema beniniense (Benin false spiderwort) is a perennial herb native to tropical Africa, from Senegal to Ethiopia and south to Angola, Zambia, and Tanzania. It is a weedy plant of disturbed ground, openings in moist semi-deciduous forest, forest farms, roadsides, fringing woodland, along watercourses in savannah, primary rainforest, and in wet areas around swamps. It is not widely known as an ornamental plant, but it does have small white to pale lilac flowers that some find attractive. It reproduces from seeds and vegetatively from creeping stems and is now reported to be naturalized on the island of Oahu.

High Risk / Undesirable Traits

- Thrives and spreads in regions with tropical climates
- Naturalized on Oahu, Hawaiian Islands
- Frequently reported as a weed of various crops and plantations
- Other species are invasive weeds
- Shade tolerant
- Reproduces by seeds and vegetatively from creeping stems.
- Self-fertile
- Seeds and stems possibly dispersed as garden waste, in soil, as a potential crop contaminant, water and possibly other means (although capsules and seeds do not show any clear adaptations for dispersal)

Low Risk Traits

- Unarmed (no spines, thorns, or burrs)
- Palatable to cattle and probably other grazing animals
- Non-toxic
- Herbicides may provide effective control (based on efficacy when on other species in the genus)