Taxon: Vigna vexillata (L.) A. Rich. **Family:** Fabaceae

Common Name(s): wild cowpea
zombi pea

Synonym(s): Dolichos vexillatus (L.) Kunth
Phaseolus vexillatus L.
Vigna vexillata f. typica Domin

Assessor: Chuck Chimera **Status:** Approved **End Date:** 20 Dec 2024

WRA Score: 12.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Domesticated, Weedy Forms, Fodder, Tuberous Roots, Dehiscent Pods

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y = -3, n = 0	y
102	Has the species become naturalized where grown?	y = 1, n = -1	y
103	Does the species have weedy races?	y = 1, n = -1	y
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	y = 1*multiplier (see Appendix 2), n = 0	y
303	Agricultural/forestry/horticultural weed		
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	y = 1, n = 0	n
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	y = 1, n = 0	n
407	Causes allergies or is otherwise toxic to humans	y = 1, n = 0	n
408	Creates a fire hazard in natural ecosystems	y = 1, n = 0	n
409	Is a shade tolerant plant at some stage of its life cycle	y = 1, n = 0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y = 1, n = 0	y

Qsn #	Question	Answer Option	Answer
411	Climbing or smothering growth habit	y = 1, n = 0	y
412	Forms dense thickets	y = 1, n = 0	n
501	Aquatic	y = 5, n = 0	n
502	Grass	y = 1, n = 0	n
503	Nitrogen fixing woody plant	y = 1, n = 0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y = 1, n = 0	y
601	Evidence of substantial reproductive failure in native habitat	y = 1, n = 0	n
602	Produces viable seed	y = 1, n = -1	y
603	Hybridizes naturally	y = 1, n = -1	n
604	Self-compatible or apomictic	y = 1, n = -1	y
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	1
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y = 1, n = -1	y
703	Propagules likely to disperse as a produce contaminant		
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)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)		
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?	y
	Source(s)	Notes
	Panzeri, D., Guidi Nissim, W., Labra, M., & Grassi, F. (2022). Revisiting the domestication process of african vigna species (fabaceae): background, perspectives and challenges. Plants, 11(4), 532	"Abstract: Legumes are one of the most economically important and biodiverse families in plants recognised as the basis to develop functional foods. Among these, the Vigna genus stands out as a good representative because of its relatively recent African origin as well as its outstanding potential. Africa is a great biodiversity centre in which a great number of species are spread, but only three of them, Vigna unguiculata, Vigna subterranea and Vigna vexillata, were successfully domesticated. This review aims at analysing and valorising these species by considering the perspective of human activity and what effects it exerts. For each species, we revised the origin history and gave a focus on where, when and how many times domestication occurred. We provided a brief summary of bioactive compounds naturally occurring in these species that are fundamental for human wellbeing. The great number of wild lineages is a key point to improve landraces since the domestication process caused a loss of gene diversity. Their genomes hide a precious gene pool yet mostly unexplored, and genes lost during human activity can be recovered from the wild lineages and reintroduced in cultivated forms through modern technologies. Finally, we describe how all this information is game-changing to the design of future crops by domesticating de novo."

102	Has the species become naturalized where grown?	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch. [Accessed 13 Dec 2024]	"Naturalized Asia-Tropical PAPUASIA: Indonesia [Papua], Papua New Guinea"
	Imada, C.T. & Kennedy, B.H. (2020). New Hawaiian plant records from Herbarium Pacificum for 2019. Bishop Museum Occasional Papers 129: 67-92	"This species of Vigna was first collected in Lāwaʻi, Kauaʻi in 2003 (Lorence 9071, PTBG) and described as an herbaceous, twining vine forming a large patch along the edge of an abandoned coffee field near the entrance of National Tropical Botanical Garden, growing in weedy secondary vegetation. It was identified by J.A. Lackey (Smithsonian) in 2004 as V. vexillata, making it a new state record (Wagner et al. 2012: 43). Now it has been documented as naturalizing along the Kona coast on Hawaiʻi."

103	Does the species have weedy races?	y
	Source(s)	Notes
	Imada, C.T. & Kennedy, B.H. (2020). New Hawaiian plant records from Herbarium Pacificum for 2019. Bishop Museum Occasional Papers 129: 67-92	"The species is widely distributed naturally in the tropics and subtropics, but its weedy range is undocumented."
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata thrives in a wide range of conditions, e.g. in grassland, in disturbed areas and as a weed of cultivation."

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High

Qsn #	Question	Answer
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Origin and geographic distribution V. vexillata most probably originated in the Old World tropics. There are two centres of genetic diversity, one in Africa (from Tanzania to South Africa) and one in South-East Asia (from Yunnan (China) to Indonesia). It is now pantropical and occasionally it is also cultivated."

202	Quality of climate match data	High
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Origin and geographic distribution V. vexillata most probably originated in the Old World tropics. There are two centres of genetic diversity, one in Africa (from Tanzania to South Africa) and one in South-East Asia (from Yunnan (China) to Indonesia). It is now pantropical and occasionally it is also cultivated."

203	Broad climate suitability (environmental versatility)	y
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata thrives in a wide range of conditions, e.g. in grassland, in disturbed areas and as a weed of cultivation. In India it flourishes from 1200-1500 m altitude in the foothills of the Himalayas and in the hills of eastern and northeastern India. In Australia it grows in the far northern monsoon region with heavy summer rainfall (1250-1500 mm) followed by a very long, pronounced dry season, on very poor, lateritic, acid soils rich in aluminium."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"References: Cuba-A-14, South Africa-AR-121, South Africa-W-382, Central America-W-157, Australia-N-945, China-W-431, United States of America-N-839, Panama-A-1190, United States of America- N-1292, south and southeast Asia-A-1408, Cuba-N-1505, Eastern Caribbean-N-1742, Colombia-N-1856, Cuba-N-2055, United States of America-N-2092, Australia-W-1977, Cuba-W-1977."
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. (2010). Flora of China. Vol. 10 (Fabaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Thickets, open forests. Anhui, Fujian, Gansu, Guangdong, Guang-xi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang [widely distributed in tropical and subtropical regions]."
	Imada, C.T. & Kennedy, B.H. (2020). New Hawaiian plant records from Herbarium Pacificum for 2019. Bishop Museum Occasional Papers 129: 67-92	"This species of Vigna was first collected in Lāwa‘i, Kaua‘i in 2003 (Lorence 9071, PTBG) and described as an herbaceous, twining vine forming a large patch along the edge of an abandoned coffee field near the entrance of National Tropical Botanical Garden, growing in weedy secondary vegetation. It was identified by J.A. Lackey (Smithsonian) in 2004 as V. vexillata, making it a new state record (Wagner et al. 2012: 43). Now it has been documented as naturalizing along the Kona coast on Hawai‘i."
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata most probably originated in the Old World tropics. There are two centres of genetic diversity, one in Africa (from Tanzania to South Africa) and one in South-East Asia (from Yunnan (China) to Indonesia). It is now pantropical and occasionally it is also cultivated."

205	Does the species have a history of repeated introductions outside its natural range?	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata most probably originated in the Old World tropics. There are two centres of genetic diversity, one in Africa (from Tanzania to South Africa) and one in South-East Asia (from Yunnan (China) to Indonesia). It is now pantropical and occasionally it is also cultivated."

301	Naturalized beyond native range	y
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch. [Accessed 13 Dec 2024]	"Naturalized Asia-Tropical PAPUASIA: Indonesia [Papua], Papua New Guinea"
	Imada, C.T. & Kennedy, B.H. (2020). New Hawaiian plant records from Herbarium Pacificum for 2019. Bishop Museum Occasional Papers 129: 67-92	[Kauai and Kona, Hawaii] "Vigna vexillata (L.) A. rich. New island record This species of Vigna was first collected in Lāwa‘i, Kaua‘i in 2003 (Lorence 9071, PTBG) and described as an herbaceous, twining vine forming a large patch along the edge of an abandoned coffee field near the entrance of National Tropical Botanical Garden, growing in weedy secondary vegetation. It was identified by J.A. Lackey (Smithsonian) in 2004 as V. vexillata, making it a new state record (Wagner et al. 2012: 43). Now it has been documented as naturalizing along the Kona coast on Hawai‘i. The species is widely distributed naturally in the tropics and subtropics, but its weedy range is undocumented. The following description is modified from Wu & Thulin (2010) “Perennial herbs, twining. Stems with spreading brown bristly hairs, glabrescent. Stipules ovate to ovate-lanceolate, 3–5 mm, cordate or auriculate at base, ciliate; petiole 1–11 cm; leaflets membranous, variable in shape, ovate to lanceolate, 4–9(–15) × 2–5(–8) cm, brown or gray pubescent on both surfaces, base rounded to cuneate, margin entire, sometimes slightly 3-lobed, apex acute or acuminate. racemes axillary, 2–6-flowered, subumbellate; peduncles 5–20 cm. Bracteoles subulate, ca. 3 mm, caducous. Calyx with brown or white bristly hairs, rarely glabrescent; tube 5–7 mm; lobes linear or linear-lanceolate, 2–5 mm, upper 2 connate at base. Standard pink, purple, or partly yellow, sometimes with yellow or purple spots inside at base, 2–3.5 × 2–4 cm, emarginate; keel whitish or purplish, falcate, with beak incurved through 180°. Legumes erect, linear-terete, 4–14 cm × 2.5–4 mm, bristly. Seeds 10–18, yellowish, black, or brown to scarlet with black spots, oblong or oblong-reniform, 2–4.5 mm.” The following key is extracted from the key to Vigna in the Flora of China (Wu & Thulin 2010) that includes the three documented naturalized species in the state (V. hosei, V. luteola, V. vexillata) and the most common native species (V. marina). 1. Corolla keel prolonged into a conspicuous beak incurved through 180° ... V. vexillata 1. Corolla keel without a conspicuous incurved beak (2). 2(1). Corolla 0.5–1 cm long ; legumes l–2 cm long ... V. hosei 2. Corolla 1.2–3 cm long; legumes 3.5–8 cm long (3). 3(2). Leaflets rounded or obtuse at apex; mature pods glabrous ... V. marina 3. Leaflets acute or acuminate at apex; mature pods pubescent ... V. luteola Material examined. HAWAI‘I: Captain Cook, Amy Greenwell Botanical Garden, volunteer plant twining in the garden, 448 m, 26 Nov 2016, E.J. Judziewicz & P. Van Dyke s.n. (BISH 767688); loc. cit., collector has noted seeing this plant at several places in Kona for several years, 03 dec 2016, K. Kimball s.n. (BISH 767743, 767748)."

Qsn #	Question	Answer
302	Garden/amenity/disturbance weed	y
	Source(s)	**Notes**
	Maxted, N., Mabuza-Diamini, P., Moss, H., Padulosi, S., Jarvis, A., & Guarino, L. (2004). An ecogeographic study African vigna. International Plant Genetic Resources Institute, Rome	"Habitat: Fallows, disturbed areas, coastal bushes, grasslands, lake edges, various grasslands, roadsides, riverbanks, thicket and cultivated fields where it grows as a weed."
	Pienaar, B. J. & Kok, P.D.F. (1991). The Vigna vexillata complex (Fabaceae) in southern Africa. South African Journal of Botany, 57(5), 236-245	"The species is not only found in grassland habitats, but also commonly in disturbed areas such as ditches along roads, dams, along regularly trodden cattle paths and as a weed of cultivation. It establishes itself readily where the dense grass cover in the grasslands has been removed."
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata thrives in a wide range of conditions, e.g. in grassland, in disturbed areas and as a weed of cultivation." [Impacts not described, but presumably competes with cultivated plants for nutrients, water or light]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Cited as an agricultural weed. Impacts unspecified] "References: Cuba-A-14, South Africa-AR-121, South Africa-W-382, Central America-W-157, Australia-N-945, China-W-431, United States of America-N-839, Panama-A-1190, United States of America- N-1292, south and southeast Asia-A-1408, Cuba-N-1505, Eastern Caribbean-N-1742, Colombia-N-1856, Cuba-N-2055, United States of America-N-2092, Australia-W-1977, Cuba-W-1977."
	WRA Specialist. (2024). Personal Communication	Cited in several sources as a weed of cultivation. For this assessment, Vigna vexillata is classified as a weed with potential negative impacts to agriculture. Because it is intentionally cultivated, evidence of negative impacts is generally lacking or equivocal. Further evidence may result in its reclassification as a detrimental agricultural weed

303	Agricultural/forestry/horticultural weed	
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata thrives in a wide range of conditions, e.g. in grassland, in disturbed areas and as a weed of cultivation." [Impacts not described, but presumably competes with cultivated plants for nutrients, water or light]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Cited as a weed of agriculture. Impacts unspecified] "References: Cuba-A-14, South Africa-AR-121, South Africa-W-382, Central America-W-157, Australia-N-945, China-W-431, United States of America-N-839, Panama-A-1190, United States of America-N-1292, south and southeast Asia-A-1408, Cuba-N-1505, Eastern Caribbean-N-1742, Colombia-N-1856, Cuba-N-2055, United States of America-N-2092, Australia-W-1977, Cuba-W-1977."
	WRA Specialist. (2024). Personal Communication	Potentially. Cited in several sources as a weed of cultivation. For this assessment, Vigna vexillata is classified as a weed with potential negative impacts to agriculture. Because it is intentionally cultivated, evidence of negative impacts is generally lacking or equivocal. Further evidence may result in its reclassification as a detrimental agricultural weed

304	Environmental weed	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[No evidence["References: Cuba-A-14, South Africa-AR-121, South Africa-W-382, Central America-W-157, Australia-N-945, China-W-431, United States of America-N-839, Panama-A-1190, United States of America-N-1292, south and southeast Asia-A-1408, Cuba-N-1505, Eastern Caribbean-N-1742, Colombia-N-1856, Cuba-N-2055, United States of America-N-2092, Australia-W-1977, Cuba-W-1977."
	CABI. (2024). CABI Compendium Invasive Species. https://www.cabidigitallibrary.org/product/qi. [Accessed 19 Dec 2024]	No evidence

305	Congeneric weed	y
	Source(s)	**Notes**
	Murphy, T. R., & Gossett, B. J. (1984). Control of cowpea (Vigna unguiculata) in soybean (Glycine max) with acifluorfen. Weed Science, 32(4), 427-431	[Equivocal evidence as a crop weed] "Cowpea plants are semiviney, summer annuals (16) that can effectively compete with soybean. Due to similarities in size, their seed are often a contaminant in soybean seed, which has assisted in their spread. In a recent South Carolina survey, cowpea ranked as the ninth most troublesome weed in soybean production." ... "We believe that cowpea has the potential to become a serious weed problem in soybean. Of the presently registered herbicides for soybean, only acifluorfen shows promise for control of cowpea."
	Liogier, A.H. & Martorell, L.F. (2000). Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Vigna hosei. Impacts unspecified] "A weed at lower to middle elevations, in wet and moist districts, eastern and central Puerto Rico; a native to Borneo and Java, sometimes planted as a soil improver."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Vigna hosei] "Weed of: Bananas, Orchards & Plantations" [Impacts generally unspecified. Often cultivated as a cover crop under trees]
	Bosch, C.H. (2004). Vigna luteola (Jacq.) Benth. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. http://www.prota4u.org/search.asp. [Accessed 16 Dec 2024]	[Vigna luteola] "It is considered a weed of rice in South America, and in South Africa it figures on the national weed list."

Qsn #	Question	Answer
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"A polymorphic, perennial, climbing or trailing herb, up to 6 m long, with sparse to dense, brownish hairs, usually with a fusiform tuberous rhizome. Leaves trifoliolate, very variable, with silky hairs on both surfaces; petiole 1.5-11.5 cm long; stipules lanceolate-cordate, 0.5-1.3 cm long; rachis up to 3 cm long, petiolule 2-4 mm; leaflets very variable, ovate-lanceolate, elliptical or linear-oblong, 2-17 cm x 0.5-8.5 cm, apex acute or acuminate, base rounded, cuneate or truncate, usually entire but rarely slightly lobed. Inflorescence a 2-6-flowered, axillary raceme; peduncle 4.5-36 cm long; rachis very short, usually bearing 3 extrafloral nectaries; pedicel 1-2 mm long; flowers about 2.5 cm long, purple or pink, sometimes yellow or white; calyx tubular, tube 5-7 mm long, bristly with long brown and short white hairs, ending in 5 lanceolate lobes up to about 2 cm long; standard asymmetrical, subcircular, 2.5-3.5 cm x 2-4 cm, emarginate, pale violet inside, yellowish outside; wings 2.5 cm long, purplish; keel asymmetrical, white or pale lilac, prolonged into a 180° incurved beak, twisted to one side; stamens 10, 1 free, 9 connate at base for 6-8 mm; pistil with upper half of style bearded and lateral stigma. Pod linear-cylindrical, 4-15 cm x 2.5-9 mm, 10-18-seeded, with brown bristly hairs. Seed globose to oblong reniform, 2.5-5 mm x 2-5 mm, plain brownish-green to black, or dark red with black speckles; aril hardly developed. Seedling with epigeal or hypogeal germination, depending on source of seed and variety."

402	Allelopathic	n
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	[Considered beneficial to other plants] "When grown together with angleton grass (Dichanthium aristatum (Poiret) C.E. Hubbard), pangola grass (Digitaria eriantha Steudel) or para grass (Brachiaria mutica (Forssk.) Stapf), V. uexillata increases the N-content of the forage mixture significantly. V. uexillata develops more slowly in mixture with grasses, but maintains a high N-content longer than Desmodium intortum (Miller) Urban or Pueraria phaseoloides (Roxb.) Beuth."

403	Parasitic	n
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"A polymorphic, perennial, climbing or trailing herb, up to 6 m long, with sparse to dense, brownish hairs, usually with a fusiform tuberous rhizome." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Rose, H. & Rose, C. (2018). Pasture “weeds” of coastal NSW. NSW Department of Primary Industries	"• Certain accessions have been used for their storage roots (high protein) and seeds (as a pulse), as well as for forage and erosion control in Africa and Asia. In the past it has been sown as a pasture legume in tropical Australia. • It is a close wild relative to Cowpea and produces a very palatable, high protein feed. • Most common in lightly grazed pastures."

Qsn #	Question	Answer
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata is grown as a green manure, cover crop, erosion-controlling plant, and as a forage. The tuberous roots are eaten like sweet potatoes in north-eastern and southern India, Australia, Ethiopia, South Africa and the Sudan. In South Africa, the young leaves and young pods are also eaten as a vegetable. Seeds are eaten as a pulse e.g. in India"

405	Toxic to animals	n
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata is grown as a green manure, cover crop, erosion-controlling plant, and as a forage. The tuberous roots are eaten like sweet potatoes in north-eastern and southern India, Australia, Ethiopia, South Africa and the Sudan. In South Africa, the young leaves and young pods are also eaten as a vegetable. Seeds are eaten as a pulse e.g. in India."
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	WRA Specialist. (2024). Personal Communication	Vigna vexillata is not known to be toxic to pets or humans. However, as with all plants, it is advisable to prevent pets and children from ingesting any part of the plant.

406	Host for recognized pests and pathogens	n
	Source(s)	**Notes**
	Maxted, N., Mabuza-Diamini, P., Moss, H., Padulosi, S., Jarvis, A., & Guarino, L. (2004). An ecogeographic study African vigna. International Plant Genetic Resources Institute, Rome	"Wild species that show marked levels of resistance to pod-sucking bugs include V. vexillata, (Padulosi and Ng, 1990) as well as V. luteola, V. oblongifolia and V. reticulata (Laghetti et al., 1998), in addition V. kirkii (Baker) Gillett and V. vexillata show high levels of resistance to bruchid pests (Laghetti et al., 1998; Padulosi and Ng, 1990). The resistance of V. vexillata to many insect pests is thought to be owing to its pubescent leaves, stems and pods. Oghiakhe et al. (1992) found that it is the density and not so much the length of trichomes that is important in conferring resistance. The trichomes are believed to interfere with the ovipositor attachment of eggs and feeding of insects."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	[No evidence] "V. vexillata is grown as a green manure, cover crop, erosion-controlling plant, and as a forage. The tuberous roots are eaten like sweet potatoes in north-eastern and southern India, Australia, Ethiopia, South Africa and the Sudan. In South Africa, the young leaves and young pods are also eaten as a vegetable. Seeds are eaten as a pulse e.g. in India."
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	WRA Specialist. (2024). Personal Communication	Vigna vexillata is not known to be toxic to pets or humans. However, as with all plants, it is advisable to prevent pets and children from ingesting any part of the plant.

408	Creates a fire hazard in natural ecosystems	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Although it is susceptible to frost and fire, it is one of the first plants to sprout after drought or fire, making the location of the tubers immediately apparent." [Tolerates fire, but no evidence that this vine contributes to fire risk or fuel load in fire prone systems]

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	**Notes**
	Malwane, T. & le Roux, M. (2022). Vigna vexillata (L.) A.Rich var. vexillata. PlantZAfrica. SANBI. https://pza.sanbi.org/vigna-vexillata-var-vexillata. [Accessed 19 Dec 2024]	"It prefers full sun exposure with soils that have light or medium to adequate water content." ... "Select an appropriate planting location in full sun and ensure that the area is not prone to flooding as the plant takes more time to grow where there is too much water."
	Tropical Plants Database, Ken Fern. (2024). Vigna vexillata. https://tropical.theferns.info/viewtropical.php?id=Vigna+vexillata. [Accessed 19 Dec 2024]	"Plants can be found in the deep shade of trees in the wild"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	**Notes**
	Botanical Realm. (2024). Wild-Cowpea (Vigna vexillata vexillata). https://www.botanicalrealm.com/plant-identification/wild-cowpea-vigna-vexillata-vexillata/. [Accessed 19 Dec 2024]	"Wild-Cowpea favors well-drained soils rich in organic matter, typically found in grasslands, open forests, and along riverbanks. It can tolerate a range of soil types, from sandy to clayey, provided there is proper drainage to prevent root rot. Optimal growth occurs in areas with full sunlight, but it is adaptable enough to grow in partially shaded sites."
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"With its wide, ecological adaptability, ability to thrive on poor soils, tolerance of waterlogging, and spreading vigour, V. vexillata is an excellent pioneer for poor land as a cover crop, green manure or erosion-controlling crop."

411	Climbing or smothering growth habit	y
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"A polymorphic, perennial, climbing or trailing herb, up to 6 m long, with sparse to dense, brownish hairs, usually with a fusiform tuberous rhizome."

412	Forms dense thickets	n
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"A polymorphic, perennial, climbing or trailing herb, up to 6 m long, with sparse to dense, brownish hairs, usually with a fusiform tuberous rhizome."

501	Aquatic	n
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	[Terrestrial] "V. vexillata thrives in a wide range of conditions, e.g. in grassland, in disturbed areas and as a weed of cultivation."

502	Grass	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2024). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch. [Accessed 12 Dec 2024]	"Genus: Vigna Subgenus: Plectrotropis Section: Plectrotropis Family: Fabaceae (alt. Leguminosae) Subfamily: Faboideae Tribe: Phaseoleae Subtribe: Phaseolinae"

503	Nitrogen fixing woody plant	n
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"A polymorphic, perennial, climbing or trailing herb, up to 6 m long, with sparse to dense, brownish hairs, usually with a fusiform tuberous rhizome." ... "Roots develop abundant N-fixing nodules." [N-fixing herbaceous herb]

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"A polymorphic, perennial, climbing or trailing herb, up to 6 m long, with sparse to dense, brownish hairs, usually with a fusiform tuberous rhizome." ... "Although it is susceptible to frost and fire, it is one of the first plants to sprout after drought or fire, making the location of the tubers immediately apparent."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	**Notes**
	Benson, D., & McDougall, L. (1996). Ecology of Sydney plant species. Part 4 Dicotyledon family Fabaceae. Cunninghamia 4(4): 552-752	"Conservation: A widely distributed and morphologically highly variable pan-tropical species reaching its limit at Sydney."
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata most probably originated in the Old World tropics. There are two centres of genetic diversity, one in Africa (from Tanzania to South Africa) and one in South-East Asia (from Yunnan (China) to Indonesia). It is now pantropical and occasionally it is also cultivated."

602	Produces viable seed	y
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Seed takes about 8-10 days to germinate. V. vexillata produces excellent leaf growth and covers the ground quickly. Roots develop abundant N-fixing nodules. Flowering occurs 3-4 months after planting, and pods ripen 1 month later." ... "Propagation is usually by seed, but is also possible by stem cuttings. Seed must be scarified to improve germination. Inoculation with appropriate Rhizobium and mixing with phosphate fertilizer prior to sowing improves establishment and growth. Seedlings grow vigorously."

603	Hybridizes naturally	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	OECD (2016). “Cowpea (Vigna unguiculata)”, in Safety Assessment of Transgenic Organisms in the Environment, Volume 6: OECD Consensus Documents, OECD Publishing, Paris	"To date, no successful natural or artificial crosses have been reported and subsequently confirmed between any member of the Vigna unguiculata species complex and any other species. Although Vigna schlechteri and Vigna vexillata are the closest species to Vigna unguiculata, numerous attempts to cross either of these species with V. unguiculata have failed (Mithen, 1989; Barone, Del Giudice and Ng, 1992; Fatokun, 2002; Fatokun, Perrino and Ng, 1997)." ... "Many efforts have sought to create viable wide crosses between cowpea and its nearest relatives, but the gulf has proven too wide. For example, it is known that resistance to some insects such as the legume podborer, M. vitrata, exists in a distant relative of cowpea, V. vexillata, but interspecific genetic barriers prevent hybridisation."
	Panzeri, D., Guidi Nissim, W., Labra, M., & Grassi, F. (2022). Revisiting the domestication process of african vigna species (fabaceae): background, perspectives and challenges. Plants, 11(4), 532	"Unfortunately, scarce findings are achieved by interspecific hybridisation. Differently from Asian taxa, where the compatibility was confirmed in different studies, the African taxa show a cross incompatibility barrier that has so far prevented the introgression of useful genes (e.g., V. vexillata V. unguiculata) [168,188–190]."

Qsn #	Question	Answer
604	**Self-compatible or apomictic**	**y**
	Source(s)	**Notes**
	Damayanti, F., Lawn, R. J., & Bielig, L. M. (2010). Genetic compatibility among domesticated and wild accessions of the tropical tuberous legume Vigna vexillata (L.) A. Rich. Crop and Pasture Science, 61(10), 785-797	"Phenotypic similarities and differences between a cultivated variety of the tuberous legume Vigna vexillata from Bali, Indonesia, the putative domesticated variety macrosperma and wild types from Africa, Australia and Indonesia, were reported previously. The present study was undertaken to establish the genetic compatibility of these three accession classes. Seventeen accessions, comprising eight cultivated Bali accessions, one var. macrosperma accession and eight wild accessions from Africa and Austronesia, were grown in large pots in shade house facilities in Townsville, Australia. Not all hybrid combinations were attempted because for some accession combinations, suitable matching flowers were not available at the same time. The main aim was to attempt enough crosses between accessions from the respective classes to establish whether the classes were genetically compatible. Hybridisation was conducted by hand pollination in the morning, using newly-open flowers that had been emasculated before sunset on the day before. Pods and viable hybrid seed were obtained from the Bali×Bali, var. macrosperma×wild and wild African×wild Austronesian combinations. However, difficulty was encountered in obtaining viable and/or self-fertile hybrids between the Bali accessions and the other two classes. Depending on the particular combination of parental accessions, different genetic breakdown mechanisms were observed with the Bali×var. macrosperma and Bali×wild combinations. In some instances, flowers failed to set pods and/ or the young pods abscised before maturity; pods set but seed were shrivelled and/or non-viable; viable seeds were set but the hybrid seedling plants were short-lived; or, in a few instances (Jimbaran Bali×wild Austronesian), vigorous hybrid plants were obtained but were self-sterile. Mitotic chromosome counts showed there was no difference in chromosome number between the Bali accessions, the Austronesian accessions and those hybrids that were viable but infertile. All exhibited 2n = 22. Pollen viability analyses using Alexander's stain indicated that the numbers of pollen grains per flower and the percentages of pollen grain that were viable were substantially lower in the hybrids than in both the cultivated Bali and wild parental accessions. Consistent with this observation, small numbers of viable seeds were obtained when viable pollen from the respective parents was backcrossed onto the self-sterile hybrids. The results suggested that the cultivated Bali accessions do not belong to the same primary gene pool as the other cultivated and wild V. vexillata accessions and that it would be difficult to use the Bali accessions and var. macrosperma concurrently to breed seed crop varieties. A taxonomic review of V. vexillata is also warranted." [Vigna vexillata can be self-fertile, but there can be difficulty obtaining viable and self-fertile hybrids]

605	**Requires specialist pollinators**	**n**
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"In Costa Rica and South Africa, Xylocarpa bees play a role in the pollination."
	WRA Specialist. (2024). Personal Communication	Xylocopa sonorina is present in the Hawaiian Islands.

Qsn #	Question	Answer
606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Propagation is usually by seed, but is also possible by stem cuttings. Seed must be scarified to improve germination." [Stem fragments or tubers might be able to be dispersed through fragmentation]

607	Minimum generative time (years)	1
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Seed takes about 8-10 days to germinate. V. uexillata produces excellent leaf growth and covers the ground quickly. Roots develop abundant N-fixing nodules. Flowering occurs 3-4 months after planting, and pods ripen 1 month later."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	Pienaar, B. J. & Kok, P.D.F. (1991). The Vigna vexillata complex (Fabaceae) in southern Africa. South African Journal of Botany, 57(5), 236-245	"The species is not only found in grassland habitats, but also commonly in disturbed areas such as ditches along roads, dams, along regularly trodden cattle paths and as a weed of cultivation. It establishes itself readily where the dense grass cover in the grasslands has been removed." [Suggests seeds are dispersed along heavily trafficked areas, although they lack means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"It is now pantropical and occasionally it is also cultivated."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata thrives in a wide range of conditions, e.g. in grassland, in disturbed areas and as a weed of cultivation." [Possibly, if occurring as a weed of other cultivated crops]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Maxted, N., Mabuza-Diamini, P., Moss, H., Padulosi, S., Jarvis, A., & Guarino, L. (2004). An ecogeographic study African vigna. International Plant Genetic Resources Institute, Rome	"Legume: Pods borne above ground, erect, linear-cylindrical, 40-140×2.5-5 mm, valves twisted at dehiscence, not constricted at maturity, bristly, hairs glabrescent, shorter than 1 mm or longer than 1 mm, dark brown." [The pods of Vigna vexillata are capable of explosive dehiscence, a mechanism where the mature pods dry out and split open forcefully, ejecting the seeds. This allows the seeds to spread a short distance away from the parent plant, reducing competition for resources.]

705	Propagules water dispersed	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Maxted, N., Mabuza-Diamini, P., Moss, H., Padulosi, S., Jarvis, A., & Guarino, L. (2004). An ecogeographic study African vigna. International Plant Genetic Resources Institute, Rome	"Legume: Pods borne above ground, erect, linear-cylindrical, 40-140×2.5-5 mm, valves twisted at dehiscence, not constricted at maturity, bristly, hairs glabrescent, shorter than 1 mm or longer than 1 mm, dark brown."
	Botanical Realm. (2024). Wild-Cowpea (Vigna vexillata vexillata). https://www.botanicalrealm.com/plant-identification/wild-cowpea-vigna-vexillata-vexillata/. [Accessed 19 Dec 2024]	"Wild-Cowpea exhibits vigorous growth, often forming dense mats. It propagates through seeds that are typically dispersed by animals or water."

706	Propagules bird dispersed	n
	Source(s)	**Notes**
	Maxted, N., Mabuza-Diamini, P., Moss, H., Padulosi, S., Jarvis, A., & Guarino, L. (2004). An ecogeographic study African vigna. International Plant Genetic Resources Institute, Rome	"Legume: Pods borne above ground, erect, linear-cylindrical, 40-140×2.5-5 mm, valves twisted at dehiscence, not constricted at maturity, bristly, hairs glabrescent, shorter than 1 mm or longer than 1 mm, dark brown."

707	Propagules dispersed by other animals (externally)	
	Source(s)	**Notes**
	Maxted, N., Mabuza-Diamini, P., Moss, H., Padulosi, S., Jarvis, A., & Guarino, L. (2004). An ecogeographic study African vigna. International Plant Genetic Resources Institute, Rome	"Legume: Pods borne above ground, erect, linear-cylindrical, 40-140×2.5-5 mm, valves twisted at dehiscence, not constricted at maturity, bristly, hairs glabrescent, shorter than 1 mm or longer than 1 mm, dark brown." [Pods could possibly adhere to animals with bristly hairs]

708	Propagules survive passage through the gut	
	Source(s)	**Notes**
	Botanical Realm. (2024). Wild-Cowpea (Vigna vexillata vexillata). https://www.botanicalrealm.com/plant-identification/wild-cowpea-vigna-vexillata-vexillata/. [Accessed 19 Dec 2024]	"Wild-Cowpea exhibits vigorous growth, often forming dense mats. It propagates through seeds that are typically dispersed by animals or water. "
	WRA Specialist. (2024). Personal Communication	Possibly. Seeds may also be dispersed by animals. The seeds might be ingested and later excreted, facilitating movement over longer distances.

801	Prolific seed production (>1000/m2)	
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Seed yields of 500-1250 kg/ha have been reported." [Possibly]

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Seed must be scarified to improve germination." [Based on this information, it is plausible that Vigna vexillata seeds can remain viable in the soil seed bank for several years, possibly up to 5 years or more, under favorable conditions, but exact longevity is unknown]

803	Well controlled by herbicides	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"V. vexillata is very sensitive to herbicides."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	**Notes**
	Hanum, I.F. & Van der Maesen, L.J.G. (eds.). 1997. PROSEA : Plant Resources of South-East Asia 11, Auxiliary Plants. Prosea Foundation, Bogor, Indonesia	"Although it is susceptible to frost and fire, it is one of the first plants to sprout after drought or fire, making the location of the tubers immediately apparent."
	Benson, D., & McDougall, L. (1996). Ecology of Sydney plant species. Part 4 Dicotyledon family Fabaceae. Cunninghamia 4(4): 552-752	[Vigna vexillata var. angustifolia] "Fire response: Quickly resprouts from rhizomes and/or tuberous roots (Lawn 1994)."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	**Notes**
	WRA Specialist. (2024). Personal Communication	Unknown

Summary of Risk Traits:

Vigna vexillata, commonly known as the zombi pea or wild cowpea, is a leguminous plant native to tropical and subtropical regions. It is a versatile species valued for its edible tubers, seeds, and forage, and it has potential uses in soil improvement due to its nitrogen-fixing abilities. The plant is cultivated in some areas for food and fodder, while its tubers are particularly appreciated for their nutritional content.

Despite its beneficial uses, Vigna vexillata can exhibit weedy or invasive tendencies. It is a fast-growing, climbing vine with a robust root system and prolific seed production, allowing it to spread rapidly in favorable conditions. Its ability to thrive in diverse environments, including degraded or nutrient-poor soils, increases its potential to outcompete native vegetation and establish in non-native areas, especially where natural control mechanisms are lacking. These characteristics make it both a valuable resource and a potential ecological concern in regions where it is introduced. In the Hawaiian Islands, it is currently reported to be naturalized on Kauai and Hawaii island.

High Risk / Undesirable Traits
• A domesticated crop with weedy and naturalized forms
• Broad climate suitability, demonstrating environmental versatility
• Grows and persists in regions with tropical climates
• Reported to be naturalized on Kauai, and in the Kona region of Hawaii island
• Weedy, or wild forms may invade disturbed habitats and could impact crops
• Other Vigna species are weedy or invasive
• Can grow in moderate shade (but prefers full sun)
• Climbing, and potentially smothering habit
• Tolerates many soil types
• A functional geophyte (with tuberous roots that allow it to persist in unfavorable conditions)
• Reproduces by seed
• Self-pollinated
• Rapidly reaches maturity from seed (3-4+ months)
• Seeds dispersed by dehiscent pods (wild types), by water, possibly through ingestion by livestock, and through intentional cultivation
• Quickly resprouts from rhizomes and/or tuberous roots after frost, drought or fire

Low Risk Traits
• Domesticated plants with reduced dispersibility and seed longevity may reduce invasion risk
• Unarmed (no spines, thorns, or burrs)
• Provides fodder for livestock
• Non-toxic
• Herbicides reported to provide effective control