

<b>Taxon:</b> <i>Vigna hosei</i> (Craib) Backer	<b>Family:</b> Fabaceae
<b>Common Name(s):</b> Sarawak bean	<b>Synonym(s):</b> Dolichos hosei Craib Vigna oligosperma Backer, nom. nud.

<b>Assessor:</b> Chuck Chimera	<b>Status:</b> Assessor Approved	<b>End Date:</b> 12 Aug 2019
<b>WRA Score:</b> 9.0	<b>Designation:</b> H(HPWRA)	<b>Rating:</b> High Risk

**Keywords:** Herbaceous Vine, Weedy, Pasture Forage, Shade Tolerant, Self-Compatible

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	n=0, y = 1*multiplier (see Appendix 2)	y
303	Agricultural/forestry/horticultural weed		
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic	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		
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)	y=1, n=0	y
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	n
601	Evidence of substantial reproductive failure in native habitat		
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)	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		
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	y=1, n=-1	n
801	Prolific seed production (>1000/m <sup>2</sup> )	y=1, n=-1	n
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		
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
	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	[Widely cultivated, but no evidence that it is highly domesticated] "V. hosei most probably originated in south-eastern Africa, but is now also found in the humid tropics of South-East Asia from Sri Lanka to Japan, and in Australia. It is also recorded from the United States. In South-East Asia it was first found in cultivation in Sarawak and taken from there to Peninsular Malaysia and later to Java. It is now cultivated in Malesia, Sri Lanka, East Africa and Surinam."
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	NA
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	NA
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 9 Aug 2019]	"Native Asia-Temperate EASTERN ASIA: Taiwan Asia-Tropical MALESIA: Indonesia, Malaysia"
	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. hosei most probably originated in south-eastern Africa, but is now also found in the humid tropics of South-East Asia from Sri Lanka to Japan, and in Australia. It is also recorded from the United States. In South-East Asia it was first found in cultivation in Sarawak and taken from there to Peninsular Malaysia and later to Java. It is now cultivated in Malesia, Sri Lanka, East Africa and Surinam."
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 9 Aug 2019]	
203	Broad climate suitability (environmental versatility)	y

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	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 can be found up to 1100 m altitude in grassland and secondary forest, in both open and shaded locations." [Able to grow over a range of 1000 m, demonstrating environmental versatility in tropical climates]
	Plants for a Future. (2019). <i>Vigna hosei</i> . <a href="https://pfaf.org/user/Plant.aspx?LatinName=Vigna+hosei">https://pfaf.org/user/Plant.aspx?LatinName=Vigna+hosei</a> . [Accessed 9 Aug 2019]	"USDA hardiness: 10-12"

204	Native or naturalized in regions with tropical or subtropical climates	y
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 9 Aug 2019]	"Native Asia-Temperate EASTERN ASIA: Taiwan Asia-Tropical MALESIA: Indonesia, Malaysia Cultivated (widely cult.) Naturalized Africa EAST TROPICAL AFRICA: Kenya, Tanzania WEST-CENTRAL TROPICAL AFRICA: Rwanda SOUTH TROPICAL AFRICA: Mozambique WESTERN INDIAN OCEAN: Madagascar Australasia AUSTRALIA: Australia Northern America SOUTHEASTERN U.S.A.: United States [Florida] Pacific NORTH-CENTRAL PACIFIC: United States [Hawaii] Southern America CARIBBEAN: Martinique, St. Lucia, United States [Puerto Rico]"
	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	" <i>V. hosei</i> most probably originated in south-eastern Africa, but is now also found in the humid tropics of South-East Asia from Sri Lanka to Japan, and in Australia. It is also recorded from the United States. In South-East Asia it was first found in cultivation in Sarawak and taken from there to Peninsular Malaysia and later to Java. It is now cultivated in Malesia, Sri Lanka, East Africa and Surinam."
	Pratt, L. W. & Bio, K. F. 2012. New plant records from Hawai'i Island. Bishop Museum Occasional Papers 113: 75-80	" <i>Vigna hosei</i> (Craib) Backer New island record a vine cultivated in tropical countries, <i>Vigna hosei</i> was first reported naturalized in the Hawaiian islands on O'ahu, in a pineapple field near Poamoho experiment Farm (Staples et al. 2006). the species also occurs on Hawai'i island, where the following specimen was collected in a Hilo field in 2006. Material examined. HAWAII: Hilo, in field at low elevation (below 150 m), growing in disturbed area of field, thin vine with grayish green foliage and pale yellow flowers, 19 Jun 2006, L. Yoshida s.n."

Qsn #	Question	Answer
	<p>Staples, G.W., Herbst, D.R. &amp; Imada, C.T. 2006. New Hawaiian plant records for 2004. Bishop Museum Occasional Papers 88: 6-9</p>	<p>"<i>Vigna hosei</i> (Craib) Backer New state record This is the first report for this legume in the state. It is believed that <i>V. hosei</i> was introduced to the Islands from Australia more than twenty years ago for testing as cover crops (G. Sakamoto, pers. comm.). Plants were observed in 1999 in a pineapple field off Kaukonahua Road, where the vines trailed along the ground and spread over the pineapple crop in the field. In January 2005 there were still thriving populations in the same location as well as in old pineapple fields past Schofield Barracks on Wilikina Rd, and possibly another location nearer Waialua in fields opposite Hukilau Loop. The species appears to be established and is now expanding its range, perhaps aided by farming machinery. <i>Vigna hosei</i> is similar to <i>V. luteola</i> and <i>V. marina</i>; it can be distinguished by the following features: prostrate or twining perennial vine, all parts pubescent with spreading hairs; leaflets mostly rounded and obtuse (rarely acute); flowers 0.5–1.0 cm, yelloworange; peduncles filiform; legumes short, 1- or 2-seeded; seeds ca 5 mm long (Howard 1988: 533–534). Although first described from plants cultivated in Indonesia, Verdcourt (1971: 621) theorized that <i>V. hosei</i> was actually of African origin. The species is cultivated in various tropical countries as a cover crop (Marechal et al. 1978) and that may be why it was introduced to the Hawaiian Islands. Material examined. O’AHU: Waialua Distr, SE of Poamoho Experiment Farm, off Kaukonahua Rd in pineapple field, 23 Jun 1999, G. Taniguchi s.n. (BISH 657223)."</p>

Qsn #	Question	Answer
205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 9 Aug 2019]	"Cultivated (widely cult.) Naturalized Africa EAST TROPICAL AFRICA: Kenya, Tanzania WEST-CENTRAL TROPICAL AFRICA: Rwanda SOUTH TROPICAL AFRICA: Mozambique WESTERN INDIAN OCEAN: Madagascar Australasia AUSTRALIA: Australia Northern America SOUTHEASTERN U.S.A.: United States [Florida] Pacific NORTH-CENTRAL PACIFIC: United States [Hawaii] Southern America CARIBBEAN: Martinique, St. Lucia, United States [Puerto Rico]"
	Staples, G.W., Herbst, D.R. & Imada, C.T. 2006. New Hawaiian plant records for 2004. Bishop Museum Occasional Papers 88: 6-9	"The species is cultivated in various tropical countries as a cover crop (Marechal et al. 1978) and that may be why it was introduced to the Hawaiian Islands."
	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. hosei most probably originated in south-eastern Africa, but is now also found in the humid tropics of South-East Asia from Sri Lanka to Japan, and in Australia. It is also recorded from the United States. In South-East Asia it was first found in cultivation in Sarawak and taken from there to Peninsular Malaysia and later to Java. It is now cultivated in Malesia, Sri Lanka, East Africa and Surinam."

301	Naturalized beyond native range	y
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 9 Aug 2019]	"Naturalized Africa EAST TROPICAL AFRICA: Kenya, Tanzania WEST-CENTRAL TROPICAL AFRICA: Rwanda SOUTH TROPICAL AFRICA: Mozambique WESTERN INDIAN OCEAN: Madagascar Australasia AUSTRALIA: Australia Northern America SOUTHEASTERN U.S.A.: United States [Florida] Pacific NORTH-CENTRAL PACIFIC: United States [Hawaii] Southern America CARIBBEAN: Martinique, St. Lucia, United States [Puerto Rico]"

Qsn #	Question	Answer
	Tateishi, Y., & Nackejima, C. (1990). The place of origin of <i>Vigna hosei</i> (Leguminosae) naturalized in Okinawa Island, the Ryukyu Islands. <i>Journal of Japanese Botany</i> , 65(8), 243-247	" <i>V. hosei</i> was discovered on Okinawa Island in 1979 in the vicinity of the Uchihara Dam. Although it is not known when and from where the species was introduced to the island, the spread of the species from its centre of origin (India and/or Borneo) throughout Asia is thought to have been via the establishment of rubber plantations and agricultural stations where it was grown as a cover crop or green manure."
	Pratt, L. W. & Bio, K. F. 2012. New plant records from Hawai'i Island. <i>Bishop Museum Occasional Papers</i> 113: 75-80	" <i>Vigna hosei</i> (Craib) Backer New island record a vine cultivated in tropical countries, <i>Vigna hosei</i> was first reported naturalized in the Hawaiian islands on O'ahu, in a pineapple field near Poamoho experiment Farm (Staples et al. 2006). the species also occurs on Hawai'i island, where the following specimen was collected in a Hilo field in 2006. Material examined. HAWAII: Hilo, in field at low elevation (below 150 m), growing in disturbed area of field, thin vine with grayish green foliage and pale yellow flowers, 19 Jun 2006, L. Yoshida s.n."
	Staples, G.W., Herbst, D.R. & Imada, C.T. 2006. New Hawaiian plant records for 2004. <i>Bishop Museum Occasional Papers</i> 88: 6-9	" <i>Vigna hosei</i> (Craib) Backer New state record This is the first report for this legume in the state. It is believed that <i>V. hosei</i> was introduced to the Islands from Australia more than twenty years ago for testing as cover crops (G. Sakamoto, pers. comm.). Plants were observed in 1999 in a pineapple field off Kaukonahua Road, where the vines trailed along the ground and spread over the pineapple crop in the field. In January 2005 there were still thriving populations in the same location as well as in old pineapple fields past Schofield Barracks on Wilikina Rd, and possibly another location nearer Waialua in fields opposite Hukilau Loop. The species appears to be established and is now expanding its range, perhaps aided by farming machinery." ... "Material examined. O'AHU: Waialua Distr, SE of Poamoho Experiment Farm, off Kaukonahua Rd in pineapple field, 23 Jun 1999, G. Taniguchi s.n. (BISH 657223)."

302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Bananas, Orchards & Plantations" [Impacts generally unspecified. Often cultivated as a cover crop under trees]
	Liogier, A.H. & Martorell, L.F. 2000. <i>Flora of Puerto Rico and adjacent islands: a systematic synopsis</i> . Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[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."
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). <i>Tropical Forages: an interactive selection tool</i> . CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	[ <i>Vigna parkeri</i> & <i>V. hosei</i> ] "Neither has shown any real tendency to become weedy, although reference is sometimes made to their being weeds of cultivation."
	WRA Specialist. (2019). Personal Communication	For this assessment, <i>Vigna hosei</i> is classified as a weed with potential negative impacts to agriculture. Because it is intentionally planted as a cover under plantation trees, evidence of negative impacts is generally lacking or equivocal. Further evidence may result in its reclassification as a detrimental agricultural weed

Qsn #	Question	Answer
303	<b>Agricultural/forestry/horticultural weed</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Bananas, Orchards & Plantations" [Impacts unspecified or unverified. Further evidence needed to answer "Yes" to this question]
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	"Weed potential - Neither has shown any real tendency to become weedy, although reference is sometimes made to their being weeds of cultivation."
	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	[Here designated as a desirable cover crop in tree plantations] "Due to its persistence under shade, <i>V. hosei</i> can enrich a mixture of leguminous covers for young plantation trees. Being a low-growing creeper, it hardly climbs trees, which is considered important for a good cover crop. Its persistence in sward-forming grasses also renders it a promising pasture legume."

304	<b>Environmental weed</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Bananas, Orchards & Plantations" [No evidence]

305	<b>Congeneric weed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Rawal, K. M. (1975). Natural hybridization among wild, weedy and cultivated <i>Vigna unguiculata</i> (L.) Walp. <i>Euphytica</i> , 24(3), 699-707	"As is the case with many cultivated species, <i>Vigna unguiculata</i> (L.) Walp. has a wild form growing in secondary forests and derived savannahs and a companion weed form adapted to disturbed habitats such as roadside ditches and fields. Evidence of introgressive hybridization between weedy and cultivated forms has been presented. The zone of extensive natural hybridization corresponds to the cultivation area in northern Nigeria and Niger and may well extend to Upper Volta and Senegal. The pattern of distribution of wild and weedy forms, the extent of introgression and ethnobotanical evidence strongly suggest West Africa as the center of domestication for <i>V. unguiculata</i> ."
	Murphy, T. R., & Gossett, B. J. (1984). Control of cowpea ( <i>Vigna unguiculata</i> ) in soybean ( <i>Glycine max</i> ) with acifluorfen. <i>Weed Science</i> , 32(4), 427-431	"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"

401	<b>Produces spines, thorns or burrs</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>



Qsn #	Question	Answer
	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	[No evidence] "Perennial herbs, twining or creeping, often forming a thick ground cover. Stipules 2-lobed at base; petiole 2–5 cm; leaflets ovate-elliptic or obliquely ovate, 3–7.5 × 2–5 cm, thinly hairy on both surfaces, base rounded, apex obtuse to acute. Racemes axillary; peduncles 1.5–7 cm; pedicels 1.7–2.2 mm, appressed pubescent. Calyx tube 1.7–2.2 mm; upper teeth connate into a triangular lip of ca. 1.2 mm. Corolla yellow; standard 6–12 mm in diam.; keel not or slightly longer than wings, not beaked. Ovary densely appressed villous. Legumes black, oblong, 1–2 cm × 4–4.5 mm, hairy, 1–4 -seeded."

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	"V. hosei is grown as a green manure and cover crop in young tree plantations; in Indonesia in rubber, tea and coconut, in Malaysia in rubber and oil palm, in Sri Lanka in coconut plantations. In Rwanda it is being tested as a green manure in association with annual crops. It is also used as a pasture legume." [No evidence of allelopathy. Grows with other plants and enhances soil nitrogen]

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 twining or creeping vine often forming a thick ground cover. Root system shallow. Stem 1-2 m long, with scattered hairs, easily rooting at the nodes." [Fabaceae. No evidence of parasitism]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Harding, W. A. T. (1972). The contribution of plant introduction to pasture development in the wet tropics of Queensland. Tropical Grasslands 6(3): 191-199	"Palatability of a range of tropical legumes was tested as many were originally plantation cover crops and grazing experience with them was minimal. The rating order for palatability was :-puero, V. hosei, centro, D. heterophyllum and calopo (Graham 1951)." ... "Of the 38 introductions tested two are available as pasture legumes. These are V. hosei (Sarawak beau) and V. luteola (Dalrymple vigna). V. hosei associates effectively with short growing grasses but is easily grazed out and gives variable performance due to disease and insect attack. Dalrymple vigna establishes quickly and gives good early growth (Davidson 1966). It is susceptible to overgrazing and dry conditions but associates well with para in some situations. All the vognas tried were susceptible to insect and disease attack."
	Shelton, H. M. (1991). Prospects for improving forage supply in coconut plantations of the South Pacific. Pp. 151 -156 in H.M. Shelton and W. W. Stur (eds.). Forages for Plantation Crops. Australian Centre for International Agricultural Research, Canberra, A.C.T.	"The productivity and quality of buffalo couch was originally thought to be too low to fatten animals (Macfarlane and Shelton 1986). However, recent evidence from Vanuatu indicates that when it can be combined with naturalised high-quality legumes such as Desmodium canum and Vigna hosei, excellent liveweight gains can be obtained (B. Mullen, pers. comm.)."

Qsn #	Question	Answer
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	[ <i>Vigna parkeri</i> & <i>V. hosei</i> ] "Forage - <i>V. parkeri</i> and <i>V. hosei</i> are both nitrogen-fixing legumes that are well eaten by livestock." ... "Both types are extremely palatable."

405	Toxic to animals	n
	Source(s)	Notes
	Harding, W. A. T. (1972). The contribution of plant introduction to pasture development in the wet tropics of Queensland. <i>Tropical Grasslands</i> 6(3): 191-199	[No evidence] "Palatability of a range of tropical legumes was tested as many were originally plantation cover crops and grazing experience with them was minimal. The rating order for palatability was :-puero, <i>V. hosei</i> , centro, <i>D. heterophyllum</i> and calopo (Graham 1951)." ... "Of the 38 introductions tested two are available as pasture legumes. These are <i>V. hosei</i> (Sarawak beau) and <i>V. luteola</i> (Dalrymple vigna). <i>V. hosei</i> associates effectively with short growing grasses but is easily grazed out and gives variable performance due to disease and insect attack. Dalrymple vigna establishes quickly and gives good early growth (Davidson 1966). It is susceptible to overgrazing and dry conditions but associates well with para in some situations. All the vignas tried were susceptible to insect and disease attack."
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	[No evidence] " <i>V. parkeri</i> and <i>V. hosei</i> are both nitrogen-fixing legumes that are well eaten by livestock." ... "Toxicity None recorded."

Qsn #	Question	Answer
406	Host for recognized pests and pathogens	
	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	"Diseases and pests As a cover crop, <i>V. hosei</i> is susceptible to a fungus disease ascribed to <i>Rhizoctonia solani</i> which causes wilting or damping-off of the leaves, the effect being that large patches of leaves die off. It may or may not regenerate, depending on weather conditions. Wet weather favours the spread of the disease. If the attack is severe, the affected patches may be sprayed with 0.2% ferbam. When replanting cleared rubber plantations, that were severely affected by root diseases, the cover may also suffer attacks by <i>Fomes lignosus</i> and <i>Ganoderma pseudoferreum</i> . Control by fungicides is not economical in such instances. Most of the pests that can destroy cover crops are leaf eaters: caterpillars, beetles, bugs, grasshoppers, snails and slugs. The roots may be attacked by cockchafer grubs and root-knot nematodes. Control measures against these pests, especially chemical sprays, are considered unnecessary because they upset the natural balance."
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	" <i>V. hosei</i> <i>Leptosphaerulina</i> sp. has been recorded causing large leaf spots. As a cover crop, <i>V. hosei</i> is susceptible to leaf blight caused by <i>Rhizoctonia solani</i> , leading to wilting and death of large patches of leaves. Wet weather and a bulk of foliage favour the spread of this disease. <i>Vigna hosei</i> is susceptible to infection by the cucumber mosaic virus."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	"Toxicity None recorded."
	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

Qsn #	Question	Answer
408	<b>Creates a fire hazard in natural ecosystems</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	"Fire - Fire is rarely an issue in areas where <i>V. parkeri</i> or <i>V. hosei</i> are used."
	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. Unlikely given rainfall requirements and shaded habitat] " <i>V. hosei</i> requires an annual rainfall of 2500 mm. Since it has a shallow root system, it has a low tolerance of drought but it can withstand flooding. It can be found up to 1100 m altitude in grassland and secondary forest, in both open and shaded locations. An outstanding characteristic is its persistence under shade, but full sunlight is required for good seed production."

409	<b>Is a shade tolerant plant at some stage of its life cycle</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Plants for a Future. (2019). <i>Vigna hosei</i> . <a href="https://pfaf.org/user/Plant.aspx?LatinName=Vigna+hosei">https://pfaf.org/user/Plant.aspx?LatinName=Vigna+hosei</a> . [Accessed 9 Aug 2019]	"Due to its persistence under shade, the plant can enrich a mixture of leguminous covers for young plantation trees."
	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 can be found up to 1100 m altitude in grassland and secondary forest, in both open and shaded locations. An outstanding characteristic is its persistence under shade, but full sunlight is required for good seed production."

410	<b>Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	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 adapted to a wide range of soils, but prefers acid soils of pH 4.9 or less."
	Plants for a Future. (2019). <i>Vigna hosei</i> . <a href="https://pfaf.org/user/Plant.aspx?LatinName=Vigna+hosei">https://pfaf.org/user/Plant.aspx?LatinName=Vigna+hosei</a> . [Accessed 9 Aug 2019]	"Succeeds in sandy to clayey soils and is tolerant of occasional waterlogging[418 ]. Prefers a pH in the range 4.5 - 5, tolerating 4 - 5.5[418 ]."

411	<b>Climbing or smothering growth habit</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	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 twining or creeping vine often forming a thick ground cover. Root system shallow. Stem 1-2 m long, with scattered hairs, easily rooting at the nodes."
	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	"Perennial herbs, twining or creeping, often forming a thick ground cover."

412	<b>Forms dense thickets</b>	<b>n</b>
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	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	[More smothering than climbing, but not described as forming thickets] "A twining or creeping vine often forming a thick ground cover." ... "Being a low-growing creeper, it hardly climbs trees, which is considered important for a good cover crop."

501	Aquatic	n
	<b>Source(s)</b>	<b>Notes</b>
	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 vine] "A twining or creeping vine often forming a thick ground cover." ... "It can be found up to 1100 m altitude in grassland and secondary forest, in both open and shaded locations."

502	Grass	n
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network. 2019. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 9 Aug 2019]	Family: Fabaceae (alt.Leguminosae) Subfamily: Faboideae Tribe: Phaseoleae Subtribe: Phaseolinae

503	Nitrogen fixing woody plant	n
	<b>Source(s)</b>	<b>Notes</b>
	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 N-fixing herbaceous vine] "A twining or creeping vine often forming a thick ground cover." ... "V. hosei fixes significant amounts of atmospheric nitrogen and forms a dense leaf litter."

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	<b>Source(s)</b>	<b>Notes</b>
	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 twining or creeping vine often forming a thick ground cover. Root system shallow."

601	Evidence of substantial reproductive failure in native habitat	
	<b>Source(s)</b>	<b>Notes</b>
	Rhodes, L. (2016). <i>Vigna hosei</i> . The IUCN Red List of Threatened Species 2016: e.T170440A1313900. <a href="http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T170440A1313900.en">http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T170440A1313900.en</a> . [Accessed 9 Aug 2019]	[Unknown] "There are few herbarium specimens and accessions of <i>Vigna hosei</i> stored ex situ, this indicates that it is a rare species (Maxted et al. 2004). The same authors suggest that African populations are Endangered as they likely to be small and isolated and that population decline is inferred from a lack of sampling since the 1960s. However, there is a lack of information available regarding the populations of this species found in southeast Asia."

602	Produces viable seed	y
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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. hosei can be propagated by seed and by cuttings. When sown as a cover crop it may be mixed with other leguminous covers such as Calopogonium mucunoides Desv., Centrosema pubescens Benth. and Pueraria phaseoloides (Roxb.) Benth. For satisfactory germination the seeds are scarified by immersing them in concentrated sulphuric acid for 10 minutes followed by repeated rinsing, or by soaking in hot water (75°C) for 2 hours or in cold water for 3 days. Mechanical scarification is also possible. Prior to sowing, the seeds may be inoculated with compost containing an appropriate Rhizobium strain, and mixed with rock phosphate fertilizer equivalent to the weight of the seeds used."

603	Hybridizes naturally	
	Source(s)	Notes
	Tomooka, N., Isemura, T., Naito, K., Kaga, A. & Vaughan, D. (2014). <i>Vigna</i> Species. Pp. 175-208 in Singh, M. et al. (eds.). Springer, New Delhi	[Unknown. Hybridization common in genus. No direct evidence found for <i>V. hosei</i> ] "Cross compatibility studies have been reviewed by Tomooka et al. ( 2002a ). Generally, there is no barrier to gene flow between domesticated forms and their closest relatives. Species in the same section of the subgenus <i>Ceratotropis</i> can usually cross with little difficulty. Natural interspecific hybrids have been found between <i>V. hirtella</i> and <i>V. minima</i> in northern Thailand (author's unpublished observations). Recently, Pandiyan et al. ( 2010 ) reported a number of cross-sectional and cross subgenus hybrids. Among these hybrids, the cross between <i>V. radiata</i> and <i>V. umbellata</i> is particularly significant as <i>V. umbellata</i> possesses a high level of resistance to bruchid beetles, one of the most serious pests of <i>Vigna</i> ."

604	Self-compatible or apomictic	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	"Flowering occurs about 6 months after planting, self-pollination is the rule."

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	[No evidence] "Flowering occurs about 6 months after planting, self-pollination is the rule."
	Roubik, D.W. 1995. Pollination of cultivated plants in the tropics. FAO Services Bulletin 118. FAO, Rome, Italy	11 <i>Vigna</i> species in Appendix I listed as bee-pollinated [ <i>V. hosei</i> not listed, but presumably with similar floral structure]

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes

Qsn #	Question	Answer
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	"Both species have become naturalized in a range of new environments. They spread locally by virtue of stolons, and greater distances through natural dissemination of seed."
	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	"Root system shallow. Stem 1-2 m long, with scattered hairs, easily rooting at the nodes." ... "V. hosei can be propagated by seed and by cuttings."

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	"Flowering occurs about 6 months after planting, self-pollination is the rule."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	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	"Root system shallow. Stem 1-2 m long, with scattered hairs, easily rooting at the nodes." ... "Seed brown, blotched with dark brown. 'Subterranean pod' 1-1.5 cm long, pale yellow, densely covered with fine hairs, 1-2-seeded, on up to 7 cm long peduncle." [Seeds and pods lack means of external attachment, but stem fragments could potentially be inadvertently dispersed as green waste]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Staples, G.W., Herbst, D.R. & Imada, C.T. 2006. New Hawaiian plant records for 2004. Bishop Museum Occasional Papers 88: 6-9	"Although first described from plants cultivated in Indonesia, Verdcourt (1971: 621) theorized that V. hosei was actually of African origin. The species is cultivated in various tropical countries as a cover crop (Marechal et al. 1978) and that may be why it was introduced to the Hawaiian Islands."
	Evans, D. O., Joy, R. J. & Chia, C. L. (1988). Cover crops for orchards in Hawaii. Research Extension Series 094. College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI	"Tropical, low-growing perennial with trailing, 0-2500 twining growth habit. Forms thick ground cover 6 in to 12 in high. Prefers acid soil (pH 4.9 or less). Propagated by seed or sprigs. Minimum sprigging distance: 3 ft by 3 ft."
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	"Vigna hosei is used as a green manure and ground cover crop in young tree plantations as well as in rubber, tea, and coconut plantations."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes

Qsn #	Question	Answer
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	" <i>Vigna hosei</i> is used as a green manure and ground cover crop in young tree plantations as well as in rubber, tea, and coconut plantations. " ... "Both species have become naturalized in a range of new environments. They spread locally by virtue of stolons, and greater distances through natural dissemination of seed." [No evidence, but seeds could possibly be moved with soil under tree plantings]

704	Propagules adapted to wind dispersal	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	"Seed brown, blotched with dark brown. 'Subterranean pod' 1-1.5 cm long, pale yellow, densely covered with fine hairs, 1-2-seeded, on up to 7 cm long peduncle."

705	Propagules water dispersed	n
	Source(s)	Notes
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	" <i>V. hosei</i> is tolerant of flooding but due to its shallow root system, it is not at all drought tolerant. Where flooding or drought occurs infrequently, stands regenerate readily from soil seed." [Unknown, but flooding could potentially disperse seeds]

706	Propagules bird dispersed	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	"Pod, 1-2 cm x 4-4.5 mm, finely pubescent, black, usually containing 1-3(-4) seeds. Seed brown, blotched with dark brown. 'Subterranean pod' 1-1.5 cm long, pale yellow, densely covered with fine hairs, 1-2-seeded, on up to 7 cm long peduncle." [No evidence, and not fleshy-fruited]

707	Propagules dispersed by other animals (externally)	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. No means of external attachment] "Pod, 1-2 cm x 4-4.5 mm, finely pubescent, black, usually containing 1-3(-4) seeds. Seed brown, blotched with dark brown. 'Subterranean pod' 1-1.5 cm long, pale yellow, densely covered with fine hairs, 1-2-seeded, on up to 7 cm long peduncle."

708	Propagules survive passage through the gut	n
	Source(s)	Notes



Qsn #	Question	Answer
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	[Although palatable, <i>V. hosei</i> bears fruit which develops below the soil surface and remains there until germination. The geocarpic seeds are unlikely to be consumed or dispersed by livestock] "Forage - <i>V. parkeri</i> and <i>V. hosei</i> are both nitrogen-fixing legumes that are well eaten by livestock." ... "Both types are extremely palatable." ... "No commercial system has been developed for <i>V. hosei</i> . Few flowers are observed above the canopy, and the majority of the seed appears to form in the litter on the soil surface. Seed is therefore best hand-harvested, paying special attention to geocarpic seed."

801	Prolific seed production (>1000/m2)	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	"The weight of 1000 seeds is about 27 g" ... "Flowering occurs about 6 months after planting, self-pollination is the rule. Seed set is poor." ... "Seed production is often poor and only about 50 kg/ha can be harvested. Harvesting seed on a field scale is also difficult." [Unlikely to achieve high seed densities with poor seed set. About 185 seeds/m2 produced]

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	[Longevity unknown] "No commercial system has been developed for <i>V. hosei</i> . Few flowers are observed above the canopy, and the majority of the seed appears to form in the litter on the soil surface. Seed is therefore best hand-harvested, paying special attention to geocarpic seed."

803	Well controlled by herbicides	y
	Source(s)	Notes
	Cook, B.G., Schultze-Kraft, R., Pengelly, B.C., Taylor, M., Jones, C., Burkart, S. and Peters, M. (2019). Tropical Forages: an interactive selection tool. CIAT and ILRI. <a href="https://apps.lucidcentral.org/tropical_forages">https://apps.lucidcentral.org/tropical_forages</a> . [Accessed 12 Aug 2019]	[Seedlings susceptible to acifluorfen, 2,4-D and 2,4-DB] "Trifluralin can be used for pre-emergent, and bentazone (at 2-4 leaf stage), the imidizolinones (imazethapyr, imazaquin), and flumetsulam for post-emergent broadleaf weed control, but there is the risk of some stunting of <i>V. parkeri</i> seedlings. Fluazifop and sethoxydim can be used for selective grass control in seed crops. Seedlings are susceptible to acifluorfen, 2,4-D and 2,4-DB."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	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 cover of <i>V. hosei</i> can be removed easily by hoeing the soil, followed by a clean weeding." [Cultivation may remove plants, but ability to regenerate unspecified]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	

Qsn #	Question	Answer
	Source(s)	Notes
	Pratt, L. W. & Bio, K. F. 2012. New plant records from Hawai'i Island. Bishop Museum Occasional Papers 113: 75-80	[Unknown] " <i>Vigna hosei</i> (Craib) Backer New island record a vine cultivated in tropical countries, <i>Vigna hosei</i> was first reported naturalized in the Hawaiian islands on O'ahu, in a pineapple field near Poamoho experiment Farm (Staples et al. 2006). the species also occurs on Hawai'i island, where the following specimen was collected in a Hilo field in 2006. Material examined. HAWAII: Hilo, in field at low elevation (below 150 m), growing in disturbed area of field, thin vine with grayish green foliage and pale yellow flowers, 19 Jun 2006, L. Yoshida s.n."

**Summary of Risk Traits:**

## High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Thrives in tropical climates
- Naturalized on Oahu and Hawaii (Hawaiian Islands); widely introduced and naturalized elsewhere
- A weedy vine that may negatively affect agriculture (but valued as a cover crop under trees)
- Other *Vigna* species are invasive
- Shade-tolerant (could possibly invade intact forest)
- Tolerates many soil types
- Smothering growth habit
- Reproduces by seeds and vegetatively by rooting at nodes
- Self-compatible
- Able to reach maturity in 6 months
- Seeds dispersed by gravity, possibly by water and intentionally by people

## Low Risk Traits

- Despite reports of weediness, valued as a palatable livestock forage, or as a cover plant under plantation trees
- Unarmed (no spines, thorns, or burrs)
- Provides fodder for livestock
- Seed production reported to be poor (could limit potential to spread)
- Certain herbicides may provide effective control