

Taxon: <i>Vicia sativa</i> L.	Family: Fabaceae
Common Name(s): black-pod vetch common vetch narrow-leaf vetch spring vetch	Synonym(s): <i>V. s. L. subsp. nigra</i> (L.) Ehrh.

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 2 Nov 2017
WRA Score: 16.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Annual Climber, Weedy, Fodder Plant, Self-Compatible, Animal-Dispersed

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		
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		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans		
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle		
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	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	y
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	n
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)	y=1, n=-1	y
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	y
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	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m ²)		
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
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
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 1 Nov 2017]	[Assessment of wild type. Traits of cultivars not addressed in this assessment] "European cultivars include Gravesa, Hifa, Nitra, Barvicos, Delphi and Aneto (the latter three late flowering types are cold hardy and can be sown in autumn as well as spring). USA cultivars include Williamette and Warrior; hybrids include Cabana White (<i>V. sativa</i> x <i>V. cabata</i>). Vantage and Nova II (<i>V. sativa</i> x <i>V. cordata</i>) and Vanguard (<i>V. sativa</i> x <i>V. serratifolia</i>)"
	Ladizinsky, G. (1979). Seed Dispersal in Relation to the Domestication of Middle East Legumes. <i>Economic Botany</i> , 33(3), 284-289	[Assessment of wild type. Traits of cultivars not addressed in this assessment] "The common vetch is a member of a polytypic species often called <i>Vicia sativa</i> aggregate (Hollings and Stace, 1974; Ladizinsky and Tamkin, 1978). This aggregate includes wild weed and cultivated forms, occasionally with different chromosome numbers and chromosome shapes, which can still be crossed with one another (Ladizinsky and Tamkin, 1978). Upon maturity the wild and the weedy types shatter their seeds as in wild pea and lentil. In most of the modern vetch cultivars, the dry mature pods remain intact but it is quite common to find various amounts of shattering, particularly among land races and local varieties."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2017. 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

Qsn #	Question	Answer
	<p>USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 1 Nov 2017]</p>	<p>"Native: Africa East Tropical Africa: Kenya; Tanzania; Uganda Northeast Tropical Africa: Ethiopia; Sudan Northern Africa: Algeria; Egypt; Libya; Morocco; Tunisia West-Central Tropical Africa: Rwanda; Zaire Asia-Temperate Arabian Peninsula: Saudi Arabia Caucasus: Armenia; Azerbaijan; Georgia; Russian Federation - Checheno-Ingushetia, - Dagestan, - Kabardino-Balkaria, - Karachay-Cherkessia, - Krasnodar, - North Ossetia, - Stavropol China: China Middle Asia: Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan Mongolia: Mongolia - Govi-Altay Siberia: Russian Federation - Irkutsk, - Krasnoyarsk, - Kurgan, - Novosibirsk, - Sverdlovsk, - Tomsk; Russian Federation-Western Siberia - Western Siberia Western Asia: Afghanistan; Cyprus; Iran; Iraq; Israel; Jordan; Lebanon; Syria; Turkey Asia-Tropical Indian Subcontinent: Bhutan; Nepal; Pakistan Europe Eastern Europe: Belarus; Estonia; Latvia; Lithuania; Moldova; Russian Federation - Arkhangelsk, - Belgorod, - Bryansk, - Chuvashia, - Ivanovo, - Kaliningrad, - Kaluga, - Karelia, - Kirov, - Komi, - Kostroma, - Kursk, - Leningrad, - Lipetsk, - Mari-El, - Mordvinia, - Moscow, - Murmansk, - Novgorod, - Orel, - Penza, - Perm, - Pskov, - Rostov, - Ryazan, - Saratov, - Smolensk, - Tambov, - Tatarstan, - Tula, - Udmurtia, - Ulyanovsk, - Vladimir, - Volgograd, - Vologda, - Voronezh, - Yaroslavl; Ukraine Middle Europe: Austria; Belgium; Czechoslovakia; Germany; Hungary; Netherlands; Poland; Switzerland Northern Europe: Denmark; Finland; Ireland; Norway; Sweden; United Kingdom Southeastern Europe: Albania; Bulgaria; Former Yugoslavia; Greece; Italy; Romania Southwestern Europe: France; Portugal; Spain"</p>

202	Quality of climate match data	High
	Source(s)	Notes
	<p>USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 1 Nov 2017]</p>	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes

Qsn #	Question	Answer
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Elevation range exceeds 1000 m, demonstrating environmental versatility] "in Hawai'i naturalized primarily in dry to moist pastures, 860-2,130 m, on East Maui and Hawai'i."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"in Hawai'i naturalized primarily in dry to moist pastures, 860-2,130 m, on East Maui and Hawai'i."
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 1 Nov 2017]	"Native: Africa East Tropical Africa: Kenya; Tanzania; Uganda Northeast Tropical Africa: Ethiopia; Sudan Northern Africa: Algeria; Egypt; Libya; Morocco; Tunisia West-Central Tropical Africa: Rwanda; Zaire Asia-Temperate Arabian Peninsula: Saudi Arabia Caucasus: Armenia; Azerbaijan; Georgia; Russian Federation - Checheno-Ingushetia, - Dagestan, - Kabardino-Balkaria, - Karachay-Cherkessia, - Krasnodar, - North Ossetia, - Stavropol China: China Middle Asia: Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan Mongolia: Mongolia - Govi-Altay Siberia: Russian Federation - Irkutsk, - Krasnoyarsk, - Kurgan, - Novosibirsk, - Sverdlovsk, - Tomsk; Russian Federation-Western Siberia - Western Siberia Western Asia: Afghanistan; Cyprus; Iran; Iraq; Israel; Jordan; Lebanon; Syria; Turkey Asia-Tropical Indian Subcontinent: Bhutan; Nepal; Pakistan Europe Eastern Europe: Belarus; Estonia; Latvia; Lithuania; Moldova; Russian Federation - Arkhangelsk, - Belgorod, - Bryansk, - Chuvashia, - Ivanovo, - Kaliningrad, - Kaluga, - Karelia, - Kirov, - Komi, - Kostroma, - Kursk, - Leningrad, - Lipetsk, - Mari-El, - Mordvinia, - Moscow, - Murmansk, - Novgorod, - Orel, - Penza, - Perm, - Pskov, - Rostov, - Ryazan, - Saratov, - Smolensk, - Tambov, - Tatarstan, - Tula, - Udmurtia, - Ulyanovsk, - Vladimir, - Volgograd, - Vologda, - Voronezh, - Yaroslavl; Ukraine Middle Europe: Austria; Belgium; Czechoslovakia; Germany; Hungary; Netherlands; Poland; Switzerland Northern Europe: Denmark; Finland; Ireland; Norway; Sweden; United Kingdom Southeastern Europe: Albania; Bulgaria; Former Yugoslavia; Greece; Italy; Romania Southwestern Europe: France; Portugal; Spain"

205	Does the species have a history of repeated introductions outside its natural range?	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Native to Europe, widely introduced as a fodder plant"
	Duke, J. A. 1981. Handbook of Legumes of World Economic Importance. Plenum Press, New York	"Of ancient origin and now widespread as an escape from cultivation throughout the temperate regions of the World. Introduced in North America from Europe, and now cultivated and escaped along roadsides throughout the United States."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"in Hawai'i naturalized primarily in dry to moist pastures, 860-2,130 m, on East Maui and Hawai'i. First collected on Hawai'i in 1909 (Rock s.n., BISH)."
	Starr, F. & Starr, K. 2011. New plant records from midway Atoll, Maui and Kaho'olawe. Bishop Museum Occasional Papers. 110: 23-35	"the following specimens were collected at an elevation of 10,000 ft [3050 m] at the Haleakalā observatories facility on Pu'u kolekole, on the summit of east maui. these new high elevation records extend the known altitudinal range of these species in Hawai'i. Previous high elevations are from Wagner et al., 1999." [Includes <i>Vicia sativa</i> l. ssp. nigra]
	Wood, K. R. 2007. New plant records, rediscoveries, range extensions, and possible extinctions within the Hawaiian Islands. Bishop Museum Occasional Papers 96: 13-17	" <i>Vicia sativa</i> L. subsp. nigra (L.) Ehrh. New island record Previously recorded from East Maui and Hawai'i, the spring or common vetch has recently been recorded as naturalized along the Mōhihi Road of Kōke'e. Material examined. KAUA'I: Kōke'e, Mōhihi Rd near Elekeninui Stream, <i>Metrosideros</i> montane forest, scandent herb, naturalized along roadside, 1109 m, 5 Jun 2006, K.R. Wood & D. Boynton 11915 (BISH, PTBG, US)."
	Queensland Government. (2017). Weeds of Australia. <i>Vicia sativa</i> . http://keyserver.lucidcentral.org . [Accessed 1 Nov 2017]	"Widely naturalised in Australia, but most common and widespread in the southern parts of the country (i.e. in many parts of New South Wales, in the ACT, Victoria and Tasmania, in the south eastern and southern parts of South Australia, and in south-western Western Australia). Occasionally also naturalised in the cooler parts of south-eastern Queensland. Also widely naturalised in North America (i.e. Canada and the USA)."

Qsn #	Question	Answer
302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	KarensGardenTips.com. 2012. Weeds and Their Control: Common Vetch (<i>Vicia sativa</i>). http://www.karensgardentips.com . [Accessed 2 Nov 2017]	"Common vetch is climbing annual vine brought to North American from southern Europe as a covercrop but has since escaped and become a troublesome weed in shrub and perennial beds in the eastern half of the United States and on the west coast."
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"in Hawai'i naturalized in pastures in mesic or occasionally dry areas"
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Pastures, Vegetables"
	WRA Specialist. 2017. Personal Communication	Regarded as an agricultural and/or environmental weed in parts of its introduced range. In Hawaii, regarded as a weed of minor significance, with potential for detrimental impacts in natural or agricultural settings.

303	Agricultural/forestry/horticultural weed	
	Source(s)	Notes
	Queensland Government. (2017). Weeds of Australia. <i>Vicia sativa</i> . http://keyserver.lucidcentral.org . [Accessed 1 Nov 2017]	"A weed of crops, wetlands, watercourses, open woodlands, grasslands, roadsides, disturbed sites, waste areas, gardens and pastures in temperate and occasionally also sub-tropical regions."
	Sattell, R., Dick, R., Luna, J., McGrath, D. M., & Peachey, R. E. (1998). Common vetch (<i>Vicia sativa</i> L.). EM 8695. Extension Service, Oregon State University, Corvallis, OR	"Common vetch offers excellent spring weed suppression. It also grows well in mixtures with cereal grains that can provide both cool-weather weed suppression and fall N scavenging." ... "Use as winter cover crop in annual rotations and in orchards and vineyards to smother spring weeds, fix N, and improve tilth. Often grown with cereal grains."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Pastures, Vegetables"
	WRA Specialist. 2017. Personal Communication	Regarded as a desirable cover crop and weed suppressor in certain crops, & a weed in others

304	Environmental weed	
	Source(s)	Notes
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Can smother native plants. Colonises bare disturbed sites." [Potential environmental weed]
	Queensland Government. (2017). Weeds of Australia. <i>Vicia sativa</i> . http://keyserver.lucidcentral.org . [Accessed 1 Nov 2017]	"Narrow-leaved vetch (<i>Vicia sativa</i> subsp. <i>nigra</i>) is regarded as an environmental weed in Victoria and Western Australia."
	Stone, C.P., Smith, C.W., & Tunison, J.T. (eds.). 1992. Alien Plant Invasions in Native Ecosystems of Hawai'i: Management and Research. Cooperative National Park Resources Studies Unit, University of Hawaii, Manoa, Honolulu, HI	Not identified as an important environmental weed in the Hawaiian Islands at the time of publication

Qsn #	Question	Answer
305	Congeneric weed	y
	Source(s)	Notes
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"This paper provides a summary of biological data on five weedy species of vetch (<i>Vicia</i>). All species are naturalized in Canada and are found in a wide range of habitats with their main centers of distribution in Eastern Canada and the south and coastal regions of British Columbia. <i>Vicia cracca</i> is the most common and serious problem and occurs nationwide. <i>Vicia sativa</i> is the most variable of the species; numerous subspecies, varieties, forms and hybrids are described. Tendrils allow vetches to attach to crop plants and form mat-like infestations. Vetch species are sensitive to a number of herbicides but there appears to be differential tolerance among species to chlorthal dimethyl, 2,4-DB and others. <i>Vicia</i> spp. are host to several economically important pathogens and parasites." ... "The perennial <i>Vicia cracca</i> is the most common and serious problem among the five weedy species. It is persistent and difficult to control in perennial crops such as tree fruits, berry crops, ornamental and forestry plantings, and pastures, and it is common along roadsides, fencerows and waste places."

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[No evidence] "Climbing annual herbs up to 8 dm long, pubescent. Leaflets 6-16, opposite, linear, lanceolate to oblong or obcordate, 6-20 (-30) mm long, (1-)4-12 mm wide, pubescent, apex acute to emarginate and mucronate, stipules ovate-acuminate, 3-5 mm long, 2-3 mm wide, with a purple nectary, usually with a dentate lateral lobe sometimes longer than the main body."

402	Allelopathic	n
	Source(s)	Notes
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Capable of fixing nitrogen and is adapted to a range of soils but not acidic, poorly-drained soils."
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	[No evidence of allelopathy] "Rakhtenko et al. (1973) investigated the reciprocal effects of root extracts from <i>V. sativa</i> and <i>Avena sativa</i> L. on these plants. Root extracts of <i>V. sativa</i> on <i>A. sativa</i> increased uptake of P and increased N and K content. Root extracts of <i>A. sativa</i> , however, had the reverse effect on <i>V. sativa</i> . Juglone, the principal agent in walnut allelopathy, had no effect on germination, but reduced radicle elongation and plant dry weight in <i>V. villosa</i> (Rietveld 1983)."

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Climbing annual herbs up to 8 dm long, pubescent." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 1 Nov 2017]	"Can be grazed by a range of livestock, including zero grazing (green fodder cut and carried). Lax grazing necessary in order to leave the basal axillary buds which are the regrowth sites."
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Native to Europe, widely introduced as a fodder plant"

405	Toxic to animals	
	Source(s)	Notes
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Under some conditions, seed of <i>V. sativa</i> may contain toxic levels of cyanogenic glycosides (Kingsbury 1964)"
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 1 Nov 2017]	[No evidence] "Short-term catch crop. High nutritive value. Protein-rich, highly acceptable feed for different classes of stock. Valuable constituent of vetch/cereal mixtures."
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	[Potentially toxic to horses] "Common milk vetch contains a neurotoxin that may be partly responsible for neurotoxicity, which usually occurs in humans in India and is associated with species of grass pea; some horses and other livestock that ingested the plant were poisoned. The toxic amino acid, beta-cyano-L-alanine, is a neurotoxin that affects the nervous system."

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Esler, A. E. (1988). The naturalisation of plants in urban Auckland, New Zealand 6. Alien plants as weeds. New Zealand journal of botany, 26(4), 585-618	"A rust fungus growing on vetch (<i>Vicia sativa</i>), affects the quality and yield of broad beans."
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 1 Nov 2017]	"Diseases - Can be affected by powdery mildew (<i>Erysiphe pisi</i>) (Papastilianou, 1995). Pests - Several pests which can cause plant damage in the USA are listed by Miller and Hoveland (1995): pea aphid (<i>Acyrtosiphon pisum</i>), corn earworm (<i>Heliothis zea</i>), fall armyworm (<i>Spodoptera frugiperda</i>), and spider mites (<i>Tetranychus</i> spp.)."

Qsn #	Question	Answer
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	[Potentially Yes. Important of <i>Vicia</i> as a host of pests and diseases in Hawaiian Islands unclear] " <i>Vicia</i> spp. are host to several economically important pathogens and parasites." ... "Several lines of <i>V. sativa</i> are highly susceptible to pea aphid (<i>Illinoia pisi</i> Kalt.) injury, while <i>V. villosa</i> , <i>V. angustifolia</i> and other lines of <i>V. sativa</i> are resistant (Albrecht 1940)." ... "Stem rot and leaf spot caused by the fungus <i>Septoria viciae</i> West has been reported in <i>V. sativa</i> in Oregon (U.S.A.) (Sprague 1940). Injury occurs in the cortical cells of the stem which extends onto the leaves and may cause extensive reduction in seed yield. Connors (1967) lists pathogenic fungi occurring in Canada on <i>Vicia</i> species." ... "Clover yellow mosaic virus causes systemic necrosis of leaves, petioles and stems in <i>V. sativa</i> in Alberta (Rao and Hiruki 1975)."]

407	Causes allergies or is otherwise toxic to humans	
	Source(s)	Notes
	Plants for a Future. 2017. <i>Vicia sativa</i> . http://www.pfaf.org/ . [Accessed 2 Nov 2017]	"There is some evidence that the seed may be toxic but this has only been shown under laboratory conditions, there are no recorded cases of poisoning by this plant in Britain[76]."
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Under some conditions, seed of <i>V. sativa</i> may contain toxic levels of cyanogenic glycosides (Kingsbury 1964)"
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	[Potentially toxic, if unlikely] "Common milk vetch contains a neurotoxin that may be partly responsible for neurotoxicity, which usually occurs in humans in India and is associated with species of grass pea; some horses and other livestock that ingested the plant were poisoned. The toxic amino acid, beta-cyano-L-alanine, is a neurotoxin that affects the nervous system."

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"in Hawai'i naturalized primarily in dry to moist pastures." [No evidence. Annual herb. Unlikely to contribute significantly to fire risk in pastures where grasses would be the major component of biomass and fuel load]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Sattell, R., Dick, R., Luna, J., McGrath, D. M., & Peachey, R. E. (1998). Common vetch (<i>Vicia sativa</i> L.). EM 8695. Extension Service, Oregon State University, Corvallis, OR	"Common vetch is somewhat shade-tolerant but does not do well when relay interplanted into tall-statured vegetable crops such as sweet corn." ... "Shade tolerance Moderate"
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"in Hawai'i naturalized in pastures in mesic or occasionally dry areas" [Occurs in high light environments]
	Plants for a Future. 2017. <i>Vicia sativa</i> . http://www.pfaf.org/ . [Accessed 2 Nov 2017]	"It can grow in semi-shade (light woodland) or no shade."

Qsn #	Question	Answer
	University of California Division of Agriculture and Natural Resources. 2017. Cover Crop Database. http://ucanr.edu/sites/asi/db/covercrops.cfm? . [Accessed 2 Nov 2017]	[Possibly Yes] "No specific information is available on its shade tolerance, but common vetch has done well as an understory cover crop in Californian prune, walnut, and pear orchards, and in vineyards (Bugg, pers. comm.)."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 1 Nov 2017]	"Adapted to a range of soils but not acidic, poorly-drained soils." ... "Prefers well-drained, moderately fertile soils pH 6.0-7.0. Responds to P fertilization. Less tolerant of poorly-drained soils than hairy vetch (Hoveland and Donnelly, 1966)."
	Duke, J. A. 1981. Handbook of Legumes of World Economic Importance. Plenum Press, New York	"Common vetch fares well in loams and sandy loams and gravelly soils, especially with adequate lime, although excess lime is injurious."
	University of California Division of Agriculture and Natural Resources. 2017. Cover Crop Database. http://ucanr.edu/sites/asi/db/covercrops.cfm? . [Accessed]	"Tolerates many soil types, but needs good drainage" ... "Goar (1934) stated that common vetch is adapted to a wide range of soil conditions, doing best on the fine-textured clay and clay-loam soils, but also performing well on sandy loam and even on somewhat gravelly soils. According to Duke (1981), common vetch does best on loams, sandy loams or gravelly soil. Madson (1951) specified loam soils as optimal. Good drainage is essential (Goar, 1934)."
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"yellow, brown or black sand or loam, red sandy clay, gravel, laterite, granite, limestone, quartzite."

411	Climbing or smothering growth habit	y
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Climbing annual herbs up to 8 dm long, pubescent."

412	Forms dense thickets	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Climbing annual herbs up to 8 dm long, pubescent."

501	Aquatic	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Terrestrial climber] "Climbing annual herbs up to 8 dm long, pubescent." ... "in Hawai'i naturalized primarily in dry to moist pastures, 860-2,130 m, on East Maui and Hawai'i."

502	Grass	n
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Qsn #	Question	Answer
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 1 Nov 2017]	Family: Fabaceae (alt.Leguminosae) Subfamily: Faboideae Tribe: Fabeae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Climbing annual herbs up to 8 dm long, pubescent." [Non-woody N-fixing plant]

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Climbing annual herbs up to 8 dm long, pubescent."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 1 Nov 2017]	No evidence. Broad native and introduced distribution

602	Produces viable seed	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"General Biology. Growth form. Herb. Life form. Annual. Reproduction. Seed. Dispersal. Birds, horses, sheep (by ingestion). Seedbank persistence. Some dormancy."
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Pods brown to nearly black, oblong, (25-)35-80 mm long, 4-12 mm wide, not stipitate. Seeds subglobose to lenticular, 2.5-5 mm in diameter, hilum extending 1/6- 1/5 of the circumference."

603	Hybridizes naturally	y
	Source(s)	Notes

Qsn #	Question	Answer
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Hybridization within the <i>V. sativa</i> aggregate has been studied extensively. Occasional hybridization occurs in nature, particularly in disturbed habitats (Zohary and Plitman 1919), but has not been reported for Canada. Experimental crosses between plants with the same chromosome number result in fertile or semifertile F ₁ hybrids. Experimental crosses involving forms with different chromosome numbers produce F ₁ hybrids with variable but generally low fertility, and with restoration of fertility in the F ₂ (Zohary and Plitmann 1979; Ladizinsky 1981). Donnelly and Clark (1962) obtained a successful cross between <i>V. sativa</i> (2n : 12) and <i>V. angustifolia</i> (2n : 10) with the F ₁ , showing hybrid vigor but 90% pollen sterility."

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"In <i>V. sativa</i> and <i>V. angustifolia</i> , anthers dehisce in the bud which effects automatic self-pollination (Knuth 1908)."
	Plants for a Future. 2017. <i>Vicia sativa</i> . http://www.pfaf.org/ . [Accessed 2 Nov 2017]	"The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, lepidoptera, self.The plant is self-fertile."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"All species possess the elaborate papilionaceous floral mechanisms adapted for cross-pollination by bees. Pollen is shed among the hairs of the stylar brush. Bees visit the flower to forage nectar secreted near the base of the stamens."
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Flowers are hermaphrodite and are pollinated by bees, moths and butterflies."
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Flowers axillary, 1-2(-4) in condensed racemes; calyx teeth subequal, shorter to longer than the tube, lower 3 teeth with a conspicuous yellowish brown nectary; corolla reddish purple, 10-30 mm long, standard usually paler than wings and keel; style dorsoventrally flattened, bearded below the stigma along the abaxial side, apex encircled by hairs."
	Plants for a Future. 2017. <i>Vicia sativa</i> . http://www.pfaf.org/ . [Accessed 2 Nov 2017]	"The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, lepidoptera, self.The plant is self-fertile."
	Duke, J. A. 1981. Handbook of Legumes of World Economic Importance. Plenum Press, New York	"Vetches are insect-pollinated, and bee hives near each field ensure pollination of flowers and increase seed yields."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes

Qsn #	Question	Answer
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Vegetative propagation - Only <i>V. cracca</i> propagates vegetatively by spreading underground roots."
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed]	[No evidence] "General Biology. Growth form. Herb. Life form. Annual. Reproduction. Seed. Dispersal. Birds, horses, sheep (by ingestion). Seedbank persistence. Some dormancy. "

607	Minimum generative time (years)	1
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Climbing annual herbs up to 8 dm long, pubescent."
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"General Biology. Growth form. Herb. Life form. Annual. Reproduction. Seed."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y
	Source(s)	Notes
	Miller, J. H. & Miller, K. V. 2005. Forest Plants of the Southeast and Their Wildlife Uses. University of Georgia Press, Athens, GA	"Early spring to early summer small colonies occur along forest margins and right-of-ways." [Occurs along heavily trafficked areas]
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Reports of seed dispersal vectors for <i>V. sativa</i> include birds and horses after passing through their guts, and adhesions to mud on boots (Ridley 1930)."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Duke, J. A. 1981. Handbook of Legumes of World Economic Importance. Plenum Press, New York	"Cultivated by few orchardists of Southern United States as a good crop which volunteers as a winter-cover and green manure crop. It volunteers in pasturelands and makes excellent pasture."
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"widely introduced as a fodder plant"

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

Qsn #	Question	Answer
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Seed is also dispersed in contaminated hay, seed and straw."
	Queensland Government. (2017). Weeds of Australia. <i>Vicia sativa</i> . http://keyserver.lucidcentral.org . [Accessed 1 Nov 2017]	"This species reproduces by seed, which may be dispersed by water or in contaminated agricultural produce (e.g. fodder and pasture seeds)."

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Pods brown to nearly black, oblong, (25-)35-80 mm long, 4-12 mm wide, not stipitate. Seeds subglobose to lenticular, 2.5-5 mm in diameter, hilum extending 1/6- 1/5 of the circumference."
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Reports of seed dispersal vectors for <i>V. sativa</i> include birds and horses after passing through their guts, and adhesions to mud on boots (Ridley 1930)." ... "Seed is also dispersed in contaminated hay, seed and straw."

705	Propagules water dispersed	y
	Source(s)	Notes
	Queensland Government. (2017). Weeds of Australia. <i>Vicia sativa</i> . http://keyserver.lucidcentral.org . [Accessed 1 Nov 2017]	"This species reproduces by seed, which may be dispersed by water or in contaminated agricultural produce (e.g. fodder and pasture seeds)."
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Valleys, riverbanks, swampy areas, breakaways, croplands, disturbed sites, gardens, road verges." [Distribution in riparian areas could facilitate movement by water]

706	Propagules bird dispersed	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Dispersal. Birds, horses, sheep (by ingestion)."
	Graham, E. H. 1941. Legumes for erosion control and wildlife. Miscellaneous Publication No. 412. US Department of Agriculture, Washington, D.C.	"It has been found in stomachs of the eastern mourning dove and observed to be eaten by the California mule deer (166)."

Qsn #	Question	Answer
707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. Canadian Journal of Plant Science, 66(3), 711-737	"Reports of seed dispersal vectors for <i>V. sativa</i> include birds and horses after passing through their guts, and adhesions to mud on boots (Ridley 1930)." ... "Seed is also dispersed in contaminated hay, seed and straw."

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Dispersal. Birds, horses, sheep (by ingestion)."
	Miller, J. H. & Miller, K. V. 2005. Forest Plants of the Southeast and Their Wildlife Uses. University of Georgia Press, Athens, GA	"Spreads by animal-dispersed seeds."
	Fazelian, S., Kohyani, P. T., & Shirmardi, H. A. (2014). Endozoochorous seed dispersal of plant species in semi-steppe rangelands. International Journal of Advanced Biological and Biomedical Research, 2(2), 473-486	[Survives gut passage with reduced viability] "The Results showed for <i>Vicia sativa</i> species, there was significant differences between cow treatment and control treatment for germination. Germination in cow treatment equal with 6.61% and control treatment equal with 14.6 percent."

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 2 Nov 2017]	"Number of seeds per kg - 16 000 to 20 000."
	Christiansen, S., El Moneim, A. A., Cocks, P. S., & Singh, M. (1996). Seed yield and hardseededness of two amphicarpace pasture legumes (<i>Vicia sativa</i> ssp. <i>amphicarpa</i> and <i>Lathyrus ciliolatus</i>) and two annual medics (<i>Medicago rigidula</i> and <i>M. noeana</i>). The Journal of Agricultural Science, 126(4), 421-427	[Potentially Yes. <i>Vicia sativa</i> ssp. <i>amphicarpa</i> capable of producing 900–1430 seeds/m ² . ssp. <i>nigra</i> in Hawaiian Islands] "Yields and hardseed breakdown of underground and aerial seeds in subterranean vetch (<i>Vicia sativa</i> ssp. <i>amphicarpa</i>) and lathyrus (<i>Lathyrus ciliolatus</i>) and aerial seeds of <i>Medicago rigidula</i> and <i>M. noeana</i> were compared at Tel Hadya, near Aleppo, in north Syria between 1990 and 1992." ... "In the field, and after all germination events, 900–1430 seeds/m ² of subterranean vetch seed remained in the soil. This was considerably more than expected, based on the low levels of hardseededness and embryo dormancy observed in the laboratory. The results suggest that dormant seeds of the amphicarpace legumes need light to germinate."

Qsn #	Question	Answer
802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	Notes
	Nagel, M., & Börner, A. (2010). The longevity of crop seeds stored under ambient conditions. <i>Seed Science Research</i> , 20(1), 1-12	"Table 3. Comparison of seed longevity values (in years) for each species as represented by absolute longevities, analysed P50 results and P50 values by Ellis's viability equations, Priestley et al. (1985) and Walters et al. (2005)" [<i>Vicia sativa</i> - Absolute longevity = 18 years]

803	Well controlled by herbicides	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2017). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 1 Nov 2017]	"Suggested method of management and control. Hand remove small/isolated populations. Lontrel® 10 mL/10 L + wetting agent provides effective control in early growth stages, otherwise apply metsulfuron methyl 0.1 g/10 L + wetting agent."
	Aarssen, L. W., HALL, I. V., & Jensen, K. I. N. (1986). The Biology of Canadian Weeds.: 76. <i>Vicia angustifolia</i> L., <i>V. cracca</i> L., <i>V. sativa</i> L., <i>V. tetrasperma</i> (L.) Schreb. and <i>V. villosa</i> Roth. <i>Canadian Journal of Plant Science</i> , 66(3), 711-737	"Superior foliar penetration accounted for improved control of <i>V. sativa</i> and other weeds with dimethyl- and diethanolamine formulations of MCPA compared to amine formulations (Biljon and Jooste 1979)."
	FAO. 2017. Grassland Species Profiles - <i>Vicia sativa</i> . http://www.fao.org/ag/agp/agpc/doc/gbase/data/pf000505.htm . [Accessed 1 Nov 2017]	"Tolerant to several pre-emergence herbicides, e.g. linuron, prometryn (Caballero et al., 1995a)."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	KarensGardenTips.com. 2012. Weeds and Their Control: Common Vetch (<i>Vicia sativa</i>). http://www.karensgardentips.com . [Accessed 2 Nov 2017]	"To protect the other plants in your garden, you will probably want to hand pull common vetch as you discover it. Although its root system is deep and extensive it will not sprout if some is left behind."
	Sattell, R., Dick, R., Luna, J., McGrath, D. M., & Peachey, R. E. (1998). Common vetch (<i>Vicia sativa</i> L.). EM 8695. Extension Service, Oregon State University, Corvallis, OR	[Possibly, at certain growth stages] "Common vetch tolerates close mowing before flowering and high mowing during flowering. Close mowing during peak flowering may kill common vetch."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R. & Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Unknown] "in Hawai'i naturalized primarily in dry to moist pastures, 860-2,130 m, on East Maui and Hawai'i. First collected on Hawai'i in 1909"

Summary of Risk Traits:

High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Able to grow in temperate and tropical climates
- Naturalized in Hawaiian Islands (Kauai, Maui, Hawaii) and elsewhere
- A weedy plant and potential agricultural and environmental weed
- Other *Vicia* species are invasive
- Seeds may be toxic
- Tolerates many soil types
- Climbing plant (can possibly smother or suppress other vegetation)
- Reproduces by seeds
- Hybridizes with other *Vicia* species
- Self-compatible
- Reaches maturity in <1 year (annual)
- Seeds dispersed by birds & other animals (internally), by adhering to boots in mud, by water, & intentionally by people
- Prolific seed production with some subspecies
- Seeds for a persistent seed bank
- Able to tolerate mowing at certain growth stages

Low Risk Traits

- Although weedy, regarded as a desirable plant for weed suppression or soil fertility in certain situations
- Unarmed (no spines, thorns, or burrs)
- Provides fodder for livestock
- Not reported to spread vegetatively
- Herbicides provide effective control