

Assessment date 5 October 2015

<i>Vicia villosa</i> ALL ZONES		Answer	Score
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to Florida's USDA climate zones (0-low; 1-intermediate; 2-high) North Zone: suited to Zones 8, 9 Central Zone: suited to Zones 9, 10 South Zone: suited to Zone 10	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in habitats with periodic inundation North Zone: mean annual precipitation 50-70 inches Central Zone: mean annual precipitation 40-60 inches South Zone: mean annual precipitation 40-60 inches	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	unk	
3.03	Weed of agriculture	y	4
3.04	Environmental weed	y	4
3.05	Congeneric weed	y	2
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	?	
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	?	
4.05	Toxic to animals	y	1
4.06	Host for recognised pests and pathogens	y	1
4.07	Causes allergies or is otherwise toxic to humans	y	1
4.08	Creates a fire hazard in natural ecosystems	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	y	1
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.		
4.11	Climbing or smothering growth habit	y	1
4.12	Forms dense thickets	n	0
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1

6.03	Hybridizes naturally	unk	-1
6.04	Self-compatible or apomictic	y	1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y	1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	n	-1
7.06	Propagules bird dispersed	unk	-1
7.07	Propagules dispersed by other animals (externally)		
7.08	Propagules dispersed by other animals (internally)		
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	y	1
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
Total Score			18
Implemented Pacific Second Screening			no
Risk Assessment Results			High

section	# questions answered	satisfy minimum?
A		10 yes
B		9 yes
C		16 yes
total		35 yes

	Reference	Source data
1.01		cultivated, but no evidence of selection for reduced weediness
1.02		
1.03		
2.01	<p>1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (0-00-0000).</p>	<p>No computer analysis was performed. 1. Global hardiness zone: 5, 6, 7, 8, 9, 10 ; equivalent to USDA Hardiness zones: 6a: to -23.3 °C (-10 °F) USDA Zone 6b: to -20.5 °C (-5 °F) USDA Zone 7a: to -17.7 °C (0 °F) USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15°F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to 1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F). 2. Native to AFRICA Macaronesia: Spain - Canary Islands Northern Africa: Algeria; Egypt; Libya; Morocco; Tunisia ASIA-TEMPERATE Western Asia: Afghanistan; Cyprus; Iran; Iraq; Israel; Lebanon; Syria; Turkey Caucasus: Azerbaijan; Georgia; Russian Federation - Checheno-Ingushetia, Dagestan, Krasnodar, Stavropol Middle Asia: Kazakhstan; Kyrgyzstan; Tajikistan; Turkmenistan; Uzbekistan EUROPE Middle Europe: Austria; Czechoslovakia; Germany; Hungary; Poland; Switzerland East Europe: Belarus; Estonia; Latvia; Lithuania; Moldova; Russian Federation - Belgorod, Bryansk, Chuvashia, Kaliningrad, Kalmykia, Kursk, Lipetsk, Mordvinia, Orel, Rostov, Saratov, Smolensk, Tambov, Tatarstan, Tula, Ulyanovsk, Volgograd, Voronezh, Yaroslavl; Ukraine [incl. Krym] Southeastern Europe: Albania; Bulgaria; Former Yugoslavia; Greece [incl. Crete]; Italy [incl. Sardinia, Sicily]; Romania Southwestern Europe: France [incl. Corsica]; Portugal; Spain [incl. Balears]</p>
2.02		
2.03	<p>1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf).</p>	<p>1. Distribution in the native/cultivated range occurs in Cfa, Csb, Csa, Bsk, Bwk, Dfb, Dfc, Dsb</p>
2.04	<p>1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (8-19-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 3. Heuzé V., Tran G., Edouard N., Lessire M., Lebas F., 2015. Hairy vetch (<i>Vicia villosa</i>). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/238 Last updated on May 11, 2015, 14:31</p>	<p>2. Grown in areas with average annual rainfall (350 -) 500 - 700 (-1,000) mm, often where clovers and medics do not do well. Has moderate drought tolerance, and does not tolerate waterlogging. 3. Hairy vetch does well in areas where annual rainfall is 350-1000 mm.</p>
2.05	<p>1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Calflora http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Vicia+villosa+ssp.+varia (10-2-2015) 3. New England Wildflower Society https://gobotany.newenglandwild.org/species/vicia/villosa/ (10-2-2015)</p>	<p><i>V. villosa</i> was introduced to the United States and can be found in every state, including Alaska and Hawaii. It is present in Canada in the following provinces: BC, MB, NS, ON, QC, YT. The species is native to central and southern Europe, Asia, and North Africa 2. Introduced and naturalized in California. 3. Hairy vetch was introduced from Europe as a forage crop for livestock, and to stabilize banks and roadsides.</p>

3.01	1. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709. 2. Stuckey, Ronald L., and Thomas Duncan. Flora of the Erie Islands: Its Origin, History and Change. Raleigh, NC: LuLu, 2010. Print.	1. Hairy vetch naturalized to the U.S. from Europe. Hairy vetch is distributed throughout each of the 50 states. 2. Naturalized in the US from Europe.
3.02		
3.03	1. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 3. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	1. Sometimes this plant becomes an agricultural pest and invades fields, and it can also successfully compete against native plants in natural habitats. 2. It is primarily a weed of disturbed sites, which can include grain crops following a green manure crop of the legume. 3. The primary environmental concern with hairy vetch is the ability of this naturalized plant to spread and maintain a stand after establishment. This is usually in crop areas, idle fields, and along roadways.
3.04	1. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 2. Cabi http://www.cabi.org/isc/datasheet/56371 (10-2-2015)	1. Sometimes this plant becomes an agricultural pest and invades fields, and it can also successfully compete against native plants in natural habitats. 2. It is a potential contaminant of crop seeds and can behave as an agricultural or environmental weed... It has the potential to affect ecosystem processes, altering the nitrogen content in the soil and also soil water availability. It can cause changes to habitat structure through forming dense herbaceous layers and outcompeting native species for space. In California, it has been evaluated as an invasive plant but its impacts in wildlands are considered minor; it is primarily an agricultural weed
3.05	1. Holm, LeRoy G. A Geographical Atlas of World Weeds. Malabar, FL: Krieger Pub., 1991. Print.	1. <i>Vicia sativa</i> is a serious weed in Indonesia, Italy, Portugal, and Poland. <i>Vicia cracca</i> is a serious weed in Finland.
4.01	1. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	no evidence of these features
4.02	1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Heuzé V., Tran G., Edouard N., Lessire M., Lebas F., 2015. Hairy vetch (<i>Vicia villosa</i>). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/238 Last updated on May 11, 2015, 14:31 3. Kamo et al. (2003) First isolation of natural cyanamide as a possible allelochemical from hairy vetch <i>Vicia villosa</i> . J Chem Ecol 29: 275-283 4. Inderjit and Asakawa (2001) Nature of interference potential of hairy vetch (<i>Vicia villosa</i> Roth) to radish (<i>Raphanus sativus</i> L.): does allelopathy play any role? Crop Protection 20:261-265	1. Allelopathic (can also be an advantage) 2. Hairy vetch readily resumes its growth during spring and, combined with a tendency to allelopathy, the stand smothers spring weeds efficiently 3. Cyanamide was identified as a major plant growth inhibitor in the leaves and stems of hairy vetch, accounting for the major proportion of the crude extract's inhibitory effect on the elongation of lettuce hypocotyl. Other lesser-contributing phytotoxic compounds in the crude extract could also contribute to the total inhibitory activity on elongation of lettuce radicle. 4. "In general, hairy vetch suppressed the root length of radish, but these inhibitory effects were eliminated when medium was supplemented with N fertilizer. Shoot height of radish was not affected by either treatment. No difference in the levels of inhibition of radish or phenolic content was recorded with two light regimes. The present study suggests that growth inhibition of radish seedling may not be due to phenolics leached by hairy vetch, and allelopathy cannot be invoked."
4.03		no evidence

4.04	<p>1. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 3. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.</p>	<p>The foliage of Hairy Vetch is palatable and can be eaten by mammalian herbivores, although there have reports of cattle being poisoned after feeding from bags that contained seeds of Hairy Vetch. 2. It is generally considered unpalatable to cattle in the early stages of growth or on first exposure to the plant, but is often well-eaten by sheep at any stage. Cattle may take a few days to accept it. 3. Hairy vetch produces high crude protein content and is utilized as forage for livestock.</p>
4.05	<p>1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Heuzé V., Tran G., Edouard N., Lessire M., Lebas F., 2015. Hairy vetch (<i>Vicia villosa</i>). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/238 Last updated on May 11, 2015, 14:31</p>	<p>Vegetative material is generally considered safe for ruminant consumption, but there are many references to poisoning in cattle, pigs and poultry from eating seeds of <i>V. villosa</i> ssp. <i>varia</i>. 2. It is commonly grown with a small grain crop (rye, wheat or oats) or with annual ryegrass to provide good quality forage (Hannaway et al., 2004). However, hairy vetch forage and seeds are known for their potential toxicity to livestock</p>
4.06	<p>1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 3. Food and Agriculture Organization http://www.fao.org/ag/agp/AGPC/doc/Gbase/data/pf000506.htm (9-28-2015)</p>	<p>1. <i>V. villosa</i> is poisonous to cattle. Consumption of the vine or its seed is associated with a number of syndromes in cattle that cause rashes, pinkeye, and diarrhea, acute nervous derangement and often death 2. Hairy vetch poisoning (vetch-associated disease) of cattle is a generalized disease characterized pathologically by infiltration of skin and many internal organs by monocytes, lymphocytes, plasma cells, and often eosinophils and multinucleated giant cells and clinically by dermatitis, pruritis, often diarrhea, wasting, and high mortality. 2. Insects feeding on the seeds or seedpods include <i>Acanthoscelides</i> spp. (Bean Weevils) and <i>Pitedia persimilis</i> (Stinkbug sp.), while <i>Epicauta fabricii</i> (Blister Beetle sp.) 3. Several pests which can sometimes 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 mite (<i>Tetranychus</i> spp.). The seed of hairy vetch, but not common vetch, is susceptible to damage by the vetch bruchid (<i>Bruchus brachialis</i>) and so natural reseeding in pastures is poor.</p>
4.07	<p>1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Roger J. Panciera, Derek A. Mosier, Jerry W. Ritchey Hairy vetch (<i>Vicia villosa</i> Roth) poisoning in cattle: update and experimental induction of disease <i>J Vet Diagn Invest</i> 4:318-325 (1992) http://vdi.sagepub.com/content/4/3/318.full.pdf (9-21-2015)</p>	<p>1. Seeds are toxic and if ingested can cause neuropathy, dermatopathy, and favism. 2. Hairy vetch poisoning (vetch-associated disease) of cattle is a generalized disease characterized pathologically by infiltration of skin and many internal organs by monocytes, lymphocytes, plasma cells, and often eosinophils and multinucleated giant cells and clinically by dermatitis, pruritis, often diarrhea, wasting, and high mortality.</p>
4.08		no evidence
4.09	<p>1. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.</p>	<p>1. Full or partial sun 2. Moderate shade tolerance.</p>
4.10		Specific information on soil preferences was limited for this species.

4.11	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. 1. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	V. villosa uses forked tendrils at the tips of its leaves to climb 2. When it is provided with support for upright growth, hairy vetch may climb and reach 1-2 m in height 2. Trailing or climbing
4.12	1. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 2. Heuzé V., Tran G., Edouard N., Lessire M., Lebas F., 2015. Hairy vetch (<i>Vicia villosa</i>). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/238 Last updated on May 11, 2015, 14:31	While Hairy Vetch forms colonies, they are not dense enough to exclude other species of plants
5.01		Family: Fabaceae
5.02		Family: Fabaceae
5.03	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015)	1. fixes nitrogen but is not a woody plant
5.04	1. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	No evidence of these features
6.01		no evidence
6.02	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015)	1. V. villosa regenerates readily via seeds
6.03		no evidence
6.04	1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Cabi http://www.cabi.org/isc/datasheet/56371 (10-2-2015)	1. V. villosa ssp. varia is an out-crossing but self-fertile species. 2. although some self-pollination may occur; cross-pollination greatly increases seed production
6.05	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 3. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	V. villosa is cross-pollinated by insects. Self-pollination is possible, however, seed set is increased when bees pollinate the flowers 2. The nectar of the flowers attracts long-tongued bees primarily, especially bumblebees. 3. Hairy vetch is utilized during pollination by bumble bees.
6.06	1. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015)	The root system produces rhizomes, enabling this plant to form vegetative colonies.
6.07		no evidence
7.01	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015) 3. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015)	1. V. villosa grows in roadsides, fields, along railroads, and waste places. 2. Habitats include moist to mesic black soil prairies, grassy meadows along rivers or in woodlands, banks of rivers, shoulders of highway overpasses, areas along roads, edges of cropland, and abandoned fields. 3. Found in bushland & thicket, disturbed upland areas; also in cultivated fields, waste places, and roadsides, most abundant in sandy soils.
7.02	1. Cabi http://www.cabi.org/isc/datasheet/56371 (10-2-2015) 2. Produced by the USDA Forest Service, Forest Health Staff, Newtown Square, PA. WOW 02-09-05 Invasive Plants website: http://www.na.fs.fed.us/fhp/invasive_plants (10-2-2015)	1. Highly likely to be transported internationally deliberately 2. Introduced into the US as ornamentals, cover crops, erosion control and as 'smother corps', to control weeds in agricultural fields.

7.03		no evidence
7.04	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	1. seeds are large and not easily dispersed. While some sources suggest this is ballistically dispersed. 2. Seeds are large and not readily dispersed, other than ballistically as seedpods dry and dehisce.
7.05	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709.	1. seeds are large and not easily dispersed. While some sources suggest this is ballistically dispersed 2. Seeds are large and not readily dispersed, other than ballistically as seedpods dry and dehisce.
7.06	1. Colleen Smith, Censusing Lianas In Mesic Biomes of Eastern RegionS A project of Robyn J. Burnham, University of Michigan http://climbers.lsa.umich.edu/?p=329 (9-21-2015) 2. Illinois Wildflowers http://www.illinoiswildflowers.info/weeds/plants/hairy_vetch.htm (9-27-2015)	1. game birds are mentioned as consuming the seeds 2. There are scattered reports of upland gamebirds eating the leaves or seeds of vetches to a limited extent, including the Ruffed Grouse, Wild Turkey, and Ring-Necked Pheasant.
7.07		no evidence
7.08		no evidence
8.01		Limited evidence
8.02	1. Renzi Juan P., Chantre Guillermo R., Cantamutto Miguel A. (2014) Development of a thermal-time model for combinational dormancy release of hairy vetch (<i>Vicia villosa</i> ssp. <i>villosa</i>). Crop and Pasture Science 65, 470–478. 2. Cabi http://www.cabi.org/isc/datasheet/56371 (10-2-2015)	1. Evidence of persistent seed bank 2. Seeds can remain viable in the soil bank for several years.
8.03	1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm (9-28-2015) 2. Owsley, M. 2011. Plant fact sheet for Hairy Vetch (<i>Vicia villosa</i>). USDA-Natural Resources Conservation Service, USDA NRCS. Americus, GA 31709. 3. Forest Service http://www.na.fs.fed.us/fhp/invasive_plants/weeds/hairy-vetch.pdf (10-2-2015)	1. <i>V. villosa</i> is susceptible to cloransulam-methyl, flumetsulam, diclosulam, S-metolachlor, and 2,4-D amine, but fairly tolerant of other pre-plant incorporated or pre-emergence herbicides including benefin, diclofop-methyl, imazamox, imazaquin, imazethapyr, pendimethalin, S-ethyl dipropylthiocarbamate, and trifluralin. Susceptible to post-emergence chemicals, glyphosate, paraquat and diquat, as well as to most broad-leaf herbicides used in cereal crops. 2. Under most conditions a systemic herbicide produces better results than a contact herbicide. 3. It can be effectively controlled using any of several readily available general use herbicides such as clopyralid. Follow label and state requirements.
8.04		No evidence, although manual control is widely considered effective

8.05	1. Cabi http://www.cabi.org/isc/datasheet/56371 (10-2-2015)	<p>1. The larvae of the vetch bruchid (<i>Bruchus brachialis</i>) feed on the seeds of <i>V. villosa</i> and can lead to poor reseeding of the plant (Owsley, 2011). The presence of this pest may account for why <i>V. villosa</i> has not been so widely planted in Mexico and central America (Gunn, 1979). Although <i>B. brachialis</i> is the only pest considered to be a serious problem (Owsley, 2011), other insect pests of forage legumes such as the pea aphid (<i>Acyrtosiphon pisum</i>), cutworm (larvae of Noctuidae moths) and corn earworm (<i>Helicoverpa zea</i>) can affect <i>V. villosa</i> (Undersander et al., 2015). Root-knot nematodes (<i>Meloidogyne</i> spp.) can also cause damage to vetch species (Undersander et al., 2015) and <i>V. villosa</i> is sensitive to several fungal diseases.</p>
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