

<b>MN NWAC Risk Assessment Worksheet (04-2011)</b>	<b>Common Name</b>	<b><i>Latin Name</i></b>
	<b>Crown Vetch</b>	<b><i>Securigera varia</i> (L.) Lassen (Formerly <i>Coronilla varia</i> L.)</b>
<b>Reviewer</b>	<b>Affiliation/Organization</b>	<b>Date (mm/dd/yyyy)</b>
<b>Roger Becker</b>	<b>University of Minnesota</b>	<b>09/18/15</b>

<b>Box</b>	<b>Question</b>	<b>Answer</b>	<b>Outcome</b>
1	Is the plant species or genotype non-native?	Yes, Central and eastern Europe, from Austria to the Ukraine, into the Caucasus region of Asia (USDA ARS, 2008).	Go to Box 3
3	Is the plant species, or a related species, documented as being a problem elsewhere?	Stated as such by 70% of respondents in a MnDNR risk survey (Van Riper, 2015). Wisconsin Restricted Weed, (Renz, 2015).	Go to Box 6
6	Does the plant species have the capacity to establish and survive in Minnesota?		
	A. Is the plant, or a close relative, currently established in Minnesota?	Yes. Earliest University of Minnesota Herbarium record near Winona, Sept 21, 1962. Twenty-four records on file. (UM Herbarium, Accessed 08/04/15).	Go to Box 7
	B. Has the plant become established in areas having a climate and growing conditions similar to those found in Minnesota?		
7	Does the plant species have the potential to reproduce and spread in Minnesota?		
	A. Does the plant reproduce by asexual/vegetative means?	Yes, spreading rhizomes. (USDA NRCS, 2002).	Go to 7B
	B. Are the asexual propagules effectively dispersed to new areas?	Yes, rhizome fragments. But require transport such as moving soil, not spread by animals.	Go to 7I

<b>Box</b>	<b>Question</b>	<b>Answer</b>	<b>Outcome</b>
	C. Does the plant produce large amounts of viable, cold-hardy seeds?	(Yes.)	<i>Go to 7F This text is provided as additional information not directed through the decision tree process for this risk assessment.</i>
	D. If this species produces low numbers of viable seeds, does it have a high level of seed/seedling vigor or do the seeds remain viable for an extended period?		
	E. Is this species self-fertile?		
	F. Are sexual propagules – viable seeds – effectively dispersed to new areas?	(Yes.)	<i>Go to 7I This text is provided as additional information not directed through the decision tree process for this risk assessment. 7C and 7F end up in 7I regardless which does not change the outcome of the RA.</i>
	G. Can the species hybridize with native species (or other introduced species) and produce viable seed and fertile offspring in the absence of human intervention?		
	H. If the species is a woody (trees, shrubs, and woody vines) is the juvenile period less than or equal to 5 years for tree species or 3 years for shrubs and vines?		
	I. Do natural controls exist, species native to Minnesota, that are documented to effectively prevent the spread of the plant in question?	No.	Go to Box 8

Box	Question	Answer	Outcome
8	Does the plant species pose significant human or livestock concerns or has the potential to significantly harm agricultural production, native ecosystems, or managed landscapes?		
	A. Does the plant have toxic qualities, or other detrimental qualities, that pose a significant risk to livestock, wildlife, or people?	No. Not highly toxic, but in special circumstances, can be for non-ruminants via nitro glycoside metabolites (Majak, 2001) when ingested in large quantities. Not toxic in ruminants, nor deer.	Go to 8B
	B. Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?	No. Is used intentionally for cover crop N source, but less common than other vetches such as hairy vetch ( <i>Vicia villosa</i> ). Use for cover crops is in decline.	Go to 8C
	C. Can the plant aggressively displace native species through competition (including allelopathic effects)?	Yes. (Van Riper, 2015).	Go to Box 9
	D. Can the plant hybridize with native species resulting in a modified gene pool and potentially negative impacts on native populations?		
	E. Does the plant have the potential to change native ecosystems (adds a vegetative layer, affects ground or surface water levels, etc.)?		
	F. Does the plant have the potential to introduce or harbor another pest or serve as an alternate host?		
9	Does the plant species have clearly defined benefits that outweigh associated negative impacts?		
	A. Is the plant currently being used or produced and/or sold in Minnesota or native to Minnesota?	Yes. Use for soil stabilization or as a cover crop for soil fertility, improving soil health – both uses in decline. Readily available online.	Go to 9B
	B. Is the plant an introduced species and can its spread be effectively and easily prevented or controlled, or its negative impacts minimized through carefully designed and executed management practices?	No.	Go to 9C

Box	Question	Answer	Outcome
	C. Is the plant native to Minnesota?	No.	Go to 9D
	D. Is a non-invasive, alternative plant material commercially available that could serve the same purpose as the plant of concern?	Yes. For cover crops could use the annual Nitro alfalfa, red clover, etc. However, many of the most common alternatives are also suspected invasives – hairy vetch, cow vetch. Not commonly used in grazing systems, causes bloat and difficult to cure for hay, winter-kills with cutting or grazing.  <b>No. No alternatives completely meet the slope stabilization and cover crop</b>	Go to Box 10  <b>Go to 9E</b>  <b>This is an alternate route that could be followed if NWAC determines that ‘No’ is the best answer.</b>
	E. Does the plant benefit Minnesota to a greater extent than the negative impacts identified at Box #8?	<b>No. No analysis available but common perceptions are that economically viable alternatives are available for use slope stabilization or cover crop use in Minnesota.</b>  Yes.	Go to Box 10  <b>Go to Box 11</b>  <b>Both are alternate routes that could be followed if NWAC determines that ‘No’ is the best answer in Box 9D.</b>
10	Should the plant species be enforced as a noxious weed to prevent introduction &/or dispersal; designate as prohibited or restricted?		
	A. Is the plant currently established in Minnesota?	Yes	Go to 10B
	B. Does the plant pose a serious human health threat?	No	Go to 10C

Box	Question	Answer	Outcome
	C. Can the plant be reliably eradicated (entire plant) or controlled (top growth only to prevent pollen dispersal and seed production as appropriate) on a statewide basis using existing practices and available resources?	<p>No. Generally considered more invasive / problematic than birdsfoot trefoil (Van Riper, 2015) (but not as common as trefoil in SW Minnesota).</p> <p><b>Yes – herbicide use (Van Riper, 2015) though may be setting up a disturbance cycle and perpetuating invasion cycles.</b></p>	<p>List as restricted noxious weed.</p> <p><b>List as prohibited noxious weed</b></p> <p><b>This is an alternate outcome if NWAC determines that ‘Yes’ is the best answer.</b></p>
11	Should the plant species be allowed in Minnesota via a species-specific management plan; designate as specially regulated?	<p><b>Better alternatives exist for cover crops. Hairy vetch typically used instead of crown vetch for cover crops if a vetch is used. Most legumes in cover crops today are short-cycling legumes such as crimson clover, dry peas, etc. (USCA NRCS, Accessed 09/18/15). No longer typically used for slope stabilization. MnDOT indicates crown vetch may not actually stabilize slopes as once thought as the surficial root mass can be undercut resulting in grade failure/ slump. Use as a forage minimal in Mn. as crown vetch does not cure well for use as hay, and causes bloat in grazing systems.</b></p>	<p><b>Allow use as a cover crop or soil stabilization use under specific management plan language.</b></p> <p><b>This is an alternate outcome if NWAC determines that ‘Yes’ is the best answer for Box 9E. Not that much demand for this use anymore so not likely outcome of RA.</b></p>
<b>Final Results of Risk Assessment</b>			
	<b>Review Entity</b>	<b>Comments</b>	<b>Outcome</b>

Box	Question	Answer	Outcome
	NWAC Listing Subcommittee	Generally considered more invasive / problematic than birds-foot trefoil (Van Riper, 2015). Better alternatives exist for cover crops. Hairy vetch typically used instead of crown vetch for cover crops if a vetch is used. Most legumes in cover crops today are short-cycling legumes such as crimson clover, dry peas, etc. No longer typically used for slope stabilization. MnDOT indicates crown vetch may not actually stabilize slopes as once thought as the surficial root mass can be undercut resulting in grade failure/ slump. Use as a forage minimal in Mn. as crown vetch does not cure well for use as hay, and causes bloat in grazing systems.	List as restricted noxious weed.
	NWAC Full-group	Vote 11 in favor and 0 opposed	REGULATE. LIST AS A RESTRICTED NOXIOUS WEED.
	MDA Commissioner	Approved NWAC Recommendation	REGULATE. LIST AS A RESTRICTED NOXIOUS WEED.
	FILE # CrownVetch_2015_MDARA00053CRVT		

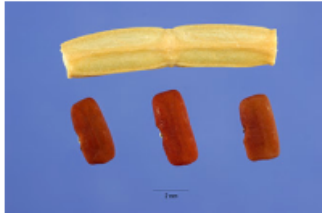
## Key References:

(List any literature, websites, and other publications)

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- Makak, W. 2001. Review of toxic glycosides in rangeland and pasture forages. *J. Range Manage.* 54: 494 –498.
- MnDNR. Crown vetch or axseed (*Coronilla varia*). <http://www.dnr.state.mn.us/invasives/terrestrialplants/herbaceous/crownvetch.html> Accessed 08/04/15.
- Renz, M. University of Wisconsin Extension. Crown vetch (*Securigera varia*) listed as an invasive plant in Wisconsin. <https://www.youtube.com/watch?v=pnYKzSPcsCg%26list=PLF35785BFF9AE7921> Accessed 08/04/15.
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- USDA NRCS. Cover Crops and Soil Health. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/climatechange/?cid=stelprdb1077238 - Cover Crop Plant Guides](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/climatechange/?cid=stelprdb1077238-CoverCropPlantGuides) Accessed 09/18/15.
- WiDNR. Invasive species rule – NR 40. Crown Vetch. Accessed 08/04/15. <http://dnr.wi.gov/topic/Invasives/speciesNR40list.asp%3FfilterBy=Category%26filterVal=Plants%26addFilter=Classification> Accessed 08/04/15.

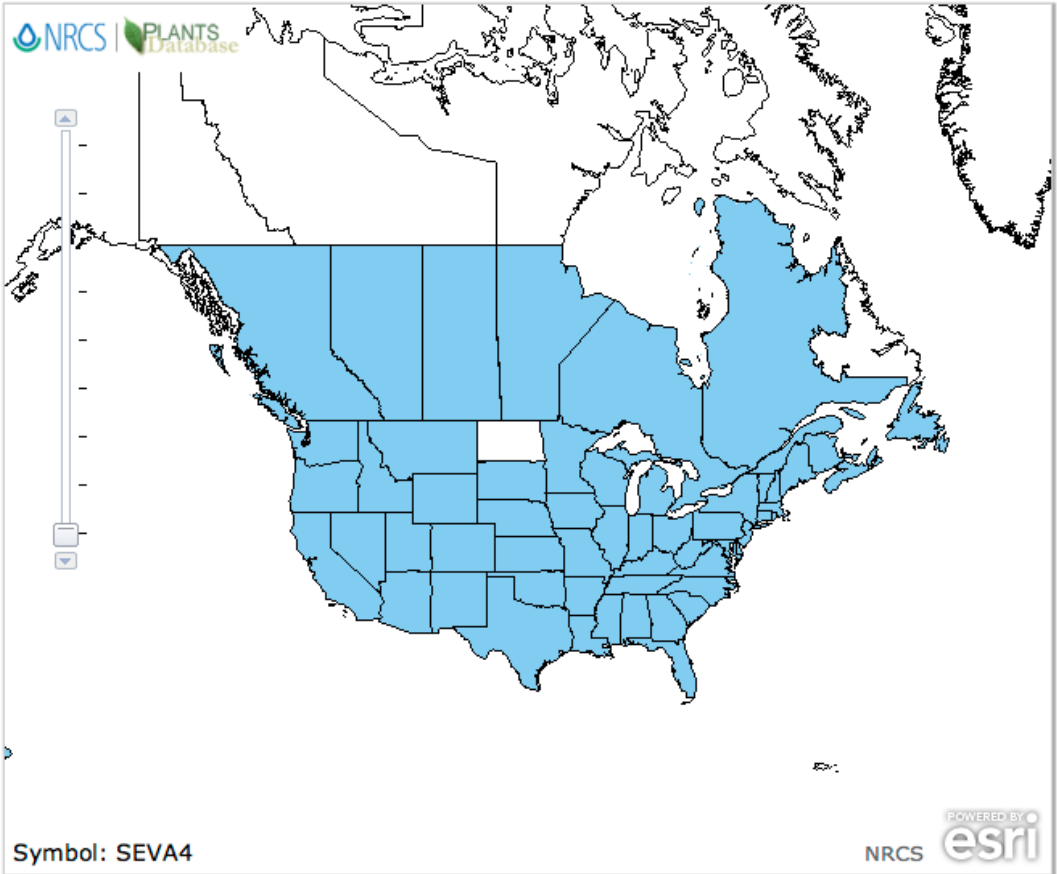
***Securigera varia* (L.) Lassen  
crownvetch**

Show Tabs



General Information	
Symbol:	SEVA4
Group:	Dicot
Family:	Fabaceae
Duration:	Perennial
Growth Habit:	Forb/herb Vine
Native Status:	CAN I HI I L48 I
Other Common Names:	purple crownvetch
<a href="#">Coronilla varia Fact Sheet (pdf)</a> <a href="#">(doc)</a>	
Data Source and Documentation	

About our new maps



Symbol: SEVA4

Native       Introduced       Both       Absent/Unreported  
 Native, No County Data       Introduced, No County Data       Both, No County Data

Native Status:

L48     AK     HI     PR     VI     NAV     CAN     GL     SPM     NA

<http://plants.usda.gov/core/profile%3Fsymbol=SEVA4>. Accessed 8/04/15.



# purple crown-vetch

*Securigera varia* (L.) Lassen

USDA PLANTS Symbol:SEVA4  
Invasive Plant Atlas

States

**Counties**

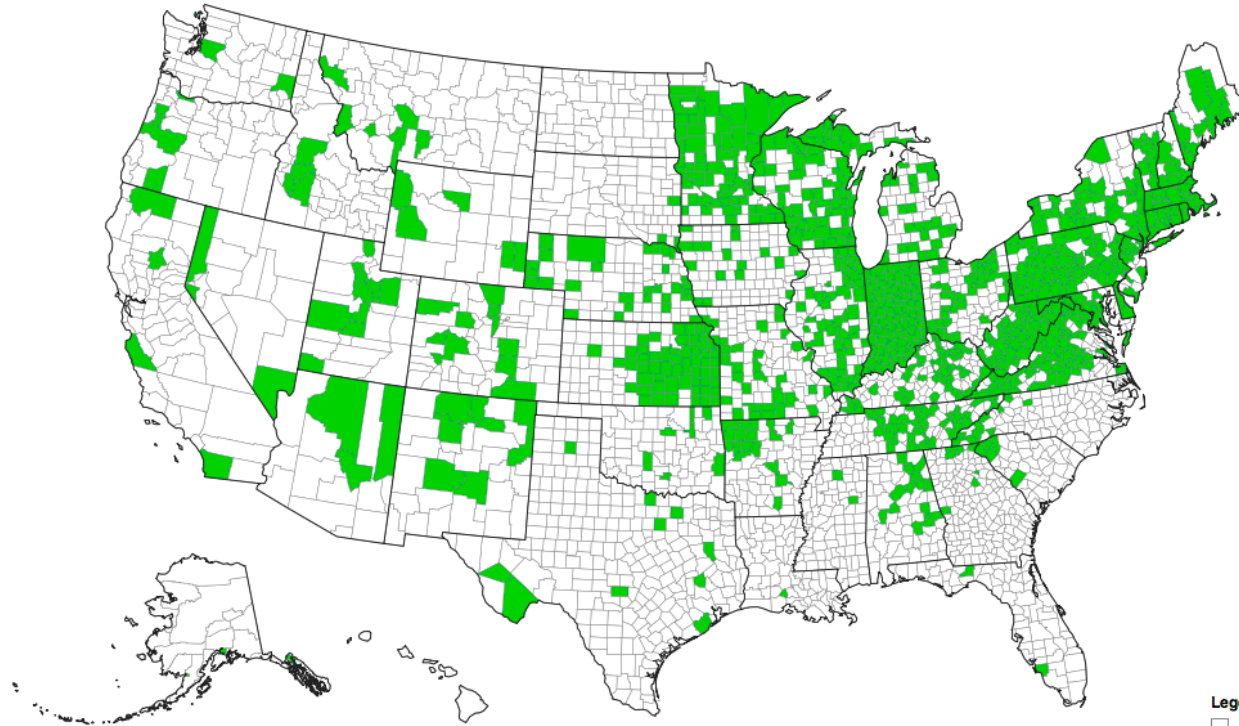
Points

GIS

List

XLS KML GPX Shapefile

Share Download Flag Fullscreen



Legend

- No Data
- Species Reported



EDDMapS. 2015. Early Detection & Distribution Mapping System. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at <http://www.eddmaps.org/>; last accessed August 4, 2015. <http://www.eddmaps.org/distribution/uscounty.cfm%3Fsub=3015> Accessed 08/04/15.

**Additional Invasive Listing Sources - from Google search, non-journal data:**

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- Mid-Atlantic Exotic Pest Plant Council, 2005
- Missouri Department of Conservation,
- Native Plant Society of Oregon, 2008
- New Hampshire Restricted Invasive Species
- New Jersey Department of Agriculture, Division of Plant Industry, 2004
- Nonnative Invasive Species in Southern Forest and Grassland Ecosystems
- South Carolina Exotic Pest Plant Council - Watch A
- Tennessee Exotic Pest Plant Council
- Virginia Invasive Plant Species List
- WeedUS - Database of Plants Invading Natural Areas in the United States