CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Profile for

***Centrocoris volxemi* (Puton): leaf-footed bug**

Hemiptera: Coreidae

Previous Pest Rating: Q

Pest Rating: A as of 08/22/2022

Comment Period: 07/08/2022 – 08/22/2022

Initiating Event:

Centrocoris volxemi was recently reported to be established in Idaho and Utah, and as it feeds on *Salsola* spp., which are widely distributed in the western United States, it will likely spread to California. It has not been through the pest rating process and a pest rating proposal is needed.

History & Status:

Background: Reported host plants of the leaf-footed bug *Centrocoris volxemi* include *Kochia scoparia* and *Salsola* (Russian thistle) (including *S. tragus*), although Linnavuori and Modarres (1998) reported the broader (but inclusive of *Salsola* spp.) category of halophytic Chenopodiaceae (Schumm, 2022; Zahniser et al., 2022). Zahniser et al. (2022) reports that *S. tragus* is the primary host in Utah and that the *Kochia scoparia* the bugs were found on was dead or dried, suggesting Kochia may not be a host. Some finds on other plants, including *Asparagus officinalis* (Asparagaceae), *Pinus* sp., *Descurainia sophia* (Brassicaceae), and *Alhagi pseudohalgi* (Fabaceae) are presumed not to represent feeding records, as they are (when numbers of specimens are given) typically single specimens and this is a mobile insect (Zahniser et al., 2022; Zeinodini et al., 2013). *Centrocoris volxemi* is not known to have any economic or environmental impacts, although it appears that is has only become introduced to the United States (Idaho and Utah).

Worldwide Distribution: *Centrocoris volxemi* is native to the Old World and has been introduced to the United States. It is reported from **Asia:** Afghanistan, Armenia, Azerbaijan, China, Georgia, Iran, Iraq, Kazakhstan, Kirgizia, Kuwait, Mongolia, Saudi Arabia, Tadzikhistan, Turkey, Turkmenistan, and Uzbekistan; **Europe:** Russian Federation; **North America:** United States (Idaho and Utah) (Amr, 2021; Blöte, 1935; Dolling, 2006; Ghahari et al., 2012; Linnavuori, 1993; Medetov et al., 2021; Sabuncu et al., 2021; SCAN; Schumm, 2022). It has been reported to be present in Utah since at least as early as 2020 (Schumm, 2022).

Official Control: *Centrocoris volxemi* is not known to be under official control anywhere.

California Distribution: *Centrocoris volxemi* is not known to be present in California.

California Interceptions: *Centrocoris volxemi* has not been intercepted in California (California Department of Food and Agriculture).

The risk *Centrocoris volxemi* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** This bug feeds on Russian thistle, which is widely distributed in California. It is established in Idaho and Utah. It appears likely it could establish widely in California. Therefore, it receives a **High (3)** in this category.

   – Low (1) Not likely to establish in California; or likely to establish in very limited areas.

   – Medium (2) may be able to establish in a larger but limited part of California.

   – High (3) likely to establish a widespread distribution in California.

2) **Known Pest Host Range:** There do not appear to be legitimate (suggestive of feeding) *C. volxemi* host records outside of the Chenopodiaceae, and it is possible that this bug is restricted to the genus *Salsola*. Therefore, it receives a **Low (1)** in this category.

– Low (1) has a very limited host range.

– Medium (2) has a moderate host range.

– High (3) has a wide host range.

3) **Pest Reproductive and Dispersal Potential:** *Centrocoris volxemi* can presumably fly. Therefore, it receives a **Medium (2)** in this category.

– Low (1) does not have high reproductive or dispersal potential.

– Medium (2) has either high reproductive or dispersal potential.

– High (3) has both high reproduction and dispersal potential.

4) **Economic Impact:** *Centrocoris volxemi* is not reported to cause direct impacts to its host plants and it is not reported to have any economic impacts. One crop in the host family Chenopodiaceae, spinach, is grown in the general area of the Old World where this bug occurs, so this crop does not appear to be at risk. Therefore, it receives a **Low (1)** in this category.

Economic Impact:

A. The pest could lower crop yield.

B. The pest could lower crop value (includes increasing crop production costs).

C. The pest could trigger the loss of markets (includes quarantines).

D. The pest could negatively change normal cultural practices.

E. The pest can vector, or is vectored, by another pestiferous organism.

F. The organism is injurious or poisonous to agriculturally important animals.

G. The organism can interfere with the delivery or supply of water for agricultural uses.

Economic Impact Score: Low

– Low (1) causes 0 or 1 of these impacts.

– Medium (2) causes 2 of these impacts.

– High (3) causes 3 or more of these impacts.

5) **Environmental Impact:** *Centrocoris volxemi* has not been reported to have any environmental impacts in its introduced range in the United States. Although it has been collected on other plants, including *Kochia* (which includes native California species), it appears likely that the only observed feeding host plant genus is *Salsola*; there are no native species in this genus in California, but several invasive weeds. Therefore, *C. volxemi* could have a positive environmental impact in California. However, there are numerous native Chenopodiaceae in California as well, and it is not known for certain that *C. volxemi* is restricted to the genus *Salsola*. Therefore, *C. volxemi* receives a **Medium (2)** in this category.

Environmental Impact: A

A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.

B. The pest could directly affect threatened or endangered species.

C. The pest could impact threatened or endangered species by disrupting critical habitats.

D. The pest could trigger additional official or private treatment programs.

E. The pest significantly impacts cultural practices, home/urban gardening or ornamental plantings.

Environmental Impact Score: Medium (2)

– Low (1) causes none of the above to occur.

– Medium (2) causes one of the above to occur.

– High (3) causes two or more of the above to occur.

Consequences of Introduction to California for *Centrocoris volxemi*: Medium (9)

Add up the total score and include it here.

–Low = 5-8 points

–Medium = 9-12 points

–High = 13-15 points

6) **Post Entry Distribution and Survey Information:** *Centrocoris volxemi* is not known to be established in California. It receives a **Not established (0)** in this category.

–Not established (0) Pest never detected in California, or known only from incursions.

–Low (-1) Pest has a localized distribution in California, or is established in one suitable climate/host area (region).

–Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest established in two contiguous suitable climate/host areas.

–High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

Final Score:

7) The final score is the consequences of introduction score minus the post entry distribution and survey information score: Medium (9)

Uncertainty:

The most significant uncertainty is the potential for *C. volxemi* to feed on native California Chenopodiaceae. It is possible that this bug is restricted to *Salsola*. However, if it can feed on other Chenopodiaceae, for example, *Kochia* species, it could impact native plants in California. It is possible that this bug is already present in California as it is not being surveyed for to my knowledge.

Conclusion and Rating Justification:

It appears unlikely (highly unlikely in the case of agriculture) that *C. volxemi* would have significant impacts on agriculture or environment in California. There are no reported crop or ornamental host plants. *Salsola* species are considered more or less invasive weeds and this insect could potentially have positive impacts on the environment in California and elsewhere in the western United States. However, there are many native plants in the family Chenopodiaceae in California, including many rare ones, and considering the lack of host specificity studies and limited introduced distribution to further assess host specificity, it seems wise to keep this insect out of California. If it is found in the state, the rating could be re-assessed. For these reasons, an "A" rating is justified.

References:

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Responsible Party:

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*Comment Period: 07/08/2022 – 08/22/2022

*NOTE:

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at permits[@]cdfa.ca.gov.

Comment Format:

- Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

Example Comment:
Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to "Climate/Host Interaction" here.]

- Posted comments will not be able to be viewed immediately.

- Comments may not be posted if they:

Contain inappropriate language which is not germane to the pest rating proposal;

Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;

Violates agency regulations prohibiting sexual harassment or other forms of discrimination;

Violates agency regulations prohibiting workplace violence, including threats.

- Comments may be edited prior to posting to ensure they are entirely germane.
- Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.

Pest Rating: A