

California Pest Rating Proposal

Aculus teucris (Nalepa): germander crinkle mite

Acari: Eriophyidae

Current Rating: Q

Proposed Rating: C

Comment Period: **8/18/2020 – 10/2/2020**

Initiating Event:

Aculus teucris was found infesting germander plants at a store in Merced County, California in 2020. It has not been rated. Therefore, a pest rating proposal is needed.

History & Status:

Background: *Aculus teucris* are tiny mites that, like many other species in the family Eriophyidae, form galls on their host plants. The galls of *A. teucris* are described as “small hairy erineae” and irregular greenish yellow galls that form on leaves at the end of stems (Ripka, 2016; Salas-Remón, 2015).

All reported hosts are in the genus *Teucrium* and include *T. capitatum*, *T. chamaedrys*, *T. murcianum*, and *T. scorodonia* (Hellrigl, 2004; Niblett, 1958 Ripka, 2007; Ripka, 2016; Salas-Remón, 2015).

The significance of the damage inflicted on host plants is poorly known. The find on germander plants in Merced County was associated with apparent galling, and the damage to leaves has been referred to as “leaf crinkle.” However, no reports of plant mortality or economic damage were found. Pirone (1978) described the damage inflicted by this mite as moderate and indicated that miticides are rarely used for that reason.

Worldwide Distribution: *Aculus teucris* is reported from Europe (including Hungary, Italy, Spain, and the United Kingdom) and the United States (California and Ohio) (Agricultural Research Service, 1960 and 1968; Hellrigl, 2004; Ripka, 2016; Salas-Remón, 2015).

Official Control: *Aculus teucris* is not known to be under official control anywhere.

California Distribution: *Aculus teucris* was found at one location in California (Carmichael, in Sacramento County), but this is not represented by an official record (Agricultural Research Service, 1968). The current status of this species in California is unknown.

California Interceptions: *Aculus teucris* was found on *Teucrium chamaedrys* at a store in Merced County in 2020 (California Department of Food and Agriculture).

The risk *Aculus teucris* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** *Aculus teucris* is present in Europe, including the Mediterranean. It also apparently became established in Ohio. Climate is therefore not expected to be the primary limitation of the potential distribution of this species in the state. The host genus, *Teucrium*, is moderately common in California as an ornamental and the few native species in this genus is limited to the deserts of southeastern California (B. Price, pers. comm.; Calflora). Therefore, it receives a **Medium (2)** 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:** The known hosts are limited to one genus of plant, *Teucrium*. 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:** Other eriophyids disperse via wind and possibly insects. Movement of infested ornamental plants could introduce this mite to new areas as well. 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.** This mite was reported to cause damage to *Teucrium* species, which are used as ornamentals. Therefore, it receives a **Low (1)** in this category.

Economic Impact: A

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.** This mite causes damage to ornamental plantings of *Teucrium*. Although there are a few native species in this genus in California, they are limited to the southeastern deserts and it seems unlikely that this mite could become established there. Therefore, *A. teucritii* receives a **Medium (2)** in this category.

Evaluate the environmental impact of the pest on California using the criteria below.

Environmental Impact: E

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 *Aculus teucritii*: Low (8)

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:** There are no official records of *A. teucriti* in California, so it must be presumed not to be established in the state. 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: Low (8)

Uncertainty:

Little information was found regarding the extent of damage inflicted on ornamental *Teucrium* by *A. teucriti*. However, this lack of readily-accessible reports of significant or economic damage combined with the wide distribution of this mite in Europe and multiple host species makes it seem unlikely that it is a serious pest of these plants. The ability of this mite to become established in the southeastern deserts of California and attack the native *Teucrium* there is unknown. If this is possible, native plants (including rare ones) could be at risk. This mite may be established in California and could be widespread here.

Conclusion and Rating Justification:

Aculus teucriti forms galls on *Teucrium* species. It is unknown if it is already established in California. Its known hosts are limited to the genus *Teucrium*, which includes some ornamentals and a few native species in California. Despite its widespread distribution in Europe, it is not reported to be a significant pest. For these reasons, a “C” rating is justified.

References:

Agricultural Research Service. 1960. Highlights of insect conditions. Cooperative Economic Insect Report 10:1033.

Agricultural Research Service. 1968. Insects affecting ornamentals. Cooperative Economic Insect Report 18:474.

Calflora. Accessed July 24, 2020:
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California Department of Food and Agriculture. Pest and damage record database. Accessed July 24, 2020:
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Niblett, M. 1958. The gall mites (Eriophyidae) of the London area. The London Naturalist 38:51-54

Pirone, P. P. 1978. Diseases and Pests of Ornamental Plants. John Wiley & Sons. New York, New York.

Ripka, G. 2007. Checklist of the eriophyid mite fauna of Hungary (Acari: Prostigmata: Eriophyidae). Acta Phytopathologica et Entomologica Hungarica 42:59-142.

Ripka, G. 2016. Three new *Aceria* species (Acari: Prostigmata" Eriophyidae) from Hungary on *Limonium gmelinii* ssp. *hungaricum* (Plumbaginaceae), *Petrorhagia prolifera* (Caryophyllaceae) and *Gypsophila paniculata* (Caryophyllaceae). Acta Phytapathologica et Entomologica Hungarica 51:103-122.

Salas-Remón, P., Llimona, X., Lozano, T., Alcaraz, F., and J. Pujade-Villar. 2015. Aportación al conocimiento de los cecidios encontrados en la vegetación de Murcia y localidades próximas del SE de España (Arthropoda: Insecta y Acari; Bacterii). Annales de Biologia 37:43-68.

Responsible Party:

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***Comment Period: 8/18/2020 – 10/2/2020**

***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](mailto: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.

Proposed Pest Rating: C