

California Pest Rating Proposal

Aceria mesembryanae Smith-Meyer: ice plant mite

Acari: Eriophyidae

Current Rating: Q

Proposed Rating: Q

Comment Period: **7/21/2020 – 9/4/2020**

Initiating Event:

Aceria mesembryanae is an obscure mite that until recently was only known from South Africa. In 2018, it was found infesting ice plants (*Lampranthus* sp.) in San Diego. It has not been rated. Therefore, a pest rating proposal is needed.

History & Status:

Background: Adult female *A. mesembryanae* are tiny (approximately 0.25 mm long and 0.07 mm wide), worm-like mites. Virtually nothing is known about this species. It was described from specimens collected from Pretoria, South Africa and does not appear to have been reported anywhere else until the 2018 California find. The South African material was collected from an unidentified *Mesembryanthemum* species (Smith-Meyer, 1981). The mites found in 2018 in San Diego were on plants of a *Lampranthus* species, possibly *L. aureus*.

The damage inflicted on host plants is not known. The California find was associated with a thrips that was causing obvious damage, so any mite damage may have been overlooked. Other eriophyids cause a variety of deformations of plant tissue. Eriophyids tend to be very host-specific.

Worldwide Distribution: *Aceria mesembryanae* is only known from South Africa (Smith-Meyer, 1981).

The status of the San Diego infestation is not known.

Official Control: *Aceria mesembryanae* is not known to be under official control anywhere.

California Distribution: *Aceria mesembryanae* was found at one location in San Diego, although the status of that infestation is not known (some plants were removed) (T. Ellis, pers. comm.).

California Interceptions: *Aceria mesembryanae* has not been intercepted in California.

The risk *Aceria mesembryanae* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** *Aceria mesembryanae* is present in South Africa and apparently was surviving in San Diego, so it can tolerate subtropical and semi-arid climates. Eriophyids are typically host-specific. This mite was reported from an unidentified species of *Mesembryanthemum* in South Africa and the San Diego infestation was associated with a *Lampranthus* species. Because of taxonomic changes, it is possible that these two plants are the same species. Therefore, either one or two species of known host plants in the family Aizoaceae are possible. Many species of Aizoaceae are used as ornamentals in California. Assuming multiple species may serve as host plants, it seems likely that this mite could become moderately widespread in California. 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:** Even if the host plant in South Africa is a different species from the one in San Diego, only two species of Aizoaceae would be known hosts. 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.** Other eriophyids cause damage to plants. This mite may damage ornamentals in the family Aizoaceae, possibly lowering yield. 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 was found on an ornamental ice plant (Aizoaceae). Plants in this family are popular landscaping plants in California, and *Lampranthus* is a relatively non-weedy genus in this family (D. Kelch, pers. comm.). Infestations of *A. mesembryanae* could impact plantings and trigger treatments. There are two species of Aizoaceae native to California, and this mite could impact them (Calflora). Therefore, *A. mesembryanae* receives a **High (3)** in this category.

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

Environmental Impact: D, 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: High (3)

– 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 *Aceria mesembryanae*: 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:** *Aceria mesembryanae* was found at one location in San Diego, but the status of that infestation is not known. It may no longer be present, as some of those plants were removed. 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 full host range and impact on host plants of *A. mesembryanae* are not known to a satisfactory degree. The potential of the mite to impact the two native (to California) species of Aizoaceae is not known. The status of the infestation in San Diego is not known. It is possible that this mite is established in California and it could even be widespread.

Conclusion and Rating Justification:

Aceria mesembryanae is very poorly known. It belongs to a family that contains many pest species, and it attacks a family of plants with many ornamental and two native species in California. The status of the single reported occurrence in California is not known. For these reasons, a “Q” rating is justified.

References:

Calflora. Accessed June 29, 2020:
<https://www.calflora.org/>

California Department of Food and Agriculture. Pest and damage record database. Accessed June 26, 2020:
<https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx>

Smith-Meyer, M. K. P. 1981. South African Eriophyidae (Acari): The genus *Aceria* Keifer, 1944. *Phytophylactica* 13:117-126.

Responsible Party:

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***Comment Period: 7/21/2020 through 9/4/2020**

***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: Q