

California Pest Rating Proposal

Thysanococcus pandani Stickney: Pandanus Halimococcia

Scale Hemiptera: Halimococcidae

Current Rating: Q

Proposed Rating: A

Comment Period: **08/13/2021 – 09/27/2021**

Initiating Event:

Thysanococcus pandani is occasionally intercepted. It has not been rated. Therefore, a pest rating proposal is needed.

History & Status:

Background: *Thysanococcus pandani* causes significant damage to *Pandanus* species (family Pandanaceae) including *P. penangensis*, *P. tectorius*, and *P. utilis* (Stickney, 1934; Portillo and Arreola, 1994). It can cause leaf deformities, discoloration, stunting, twisting, yellowing, and eventually the loss of entire crowns and possible premature death of stressed trees. It was originally reported only in Java and Singapore and was first recorded in Hawaii at Hana, Maui, in 1995.

Worldwide Distribution: *Thysanococcus pandani* is reported in Indonesia, Java, Singapore, Bogor, and the United States in Hawaii island (Stickney, 1934).

Official Control: *Thysanococcus pandani* is not known to be under official control anywhere.

(USDA -Phytopanitary Export Database)

California Distribution: *Thysanococcus pandani* is not known to be present in California.

California Interceptions: *Thysanococcus pandani* has been intercepted in California multiple times since 2003 on plant material from Hawaii (California Department of Food and Agriculture).

The risk *Thysanococcus pandani* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** Reported hosts for this scale are limited to genus *Pandanus* of the family Pandanaceae. These hosts are possibly present in coastal areas of Southern California, so it is likely to establish in very limited areas, and therefore it receives a Low (1) 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:** This scale is reported to feed on plants of only one family and one genus. 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:** Like other scale insects *Thysanococcus pandani* has high reproductive potential with multiple overlapping generations. It disperses from its mother while in the first instar/crawler stage, and is spread by moving infested plants, leaves, and fruit (Stickney, 1934). Therefore, it receives a **High (3)** 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:** *Pandanus* is sold in the nursery trade and grown as an ornamental in Southern California. Infestations of this insect could trigger nurseries and homeowners to treat affected plants. **Low (1)** in this category.

Economic Impact: D

- 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:** It could trigger treatments and affect home gardens. Therefore, it 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 *Thysanococcus pandani*: 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:** *Thysanococcus pandani* is not known to be present 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:

Thysanococcus pandani does not appear to be a significant pest elsewhere in the world, and the number of known hosts in California is very limited. The greatest uncertainty is its pest significance if it were to become established in California.

Conclusion and Rating Justification:

Thysanococcus pandani is not known to be present in California and it seems prudent to keep it out. For these reasons, an “A” rating is justified.

References:

California Department of Food and Agriculture. Pest and damage record database. Accessed July 1, 2021: <https://pdr.cdfa.ca.gov/PDR/>

García, M., Denno, B., Miller, D., Miller, G., Ben-Dov, Y., and Hardy, N. 2016. ScaleNet: A literature-based model of scale insect biology and systematics. Database. doi: 10.1093/database/bav118. Accessed July 1, 2021: <http://scalenet.info/catalogue/Thysanococcus%20pandani/>

Portillo Martínez, L., & Arreola Nava, H.J. 1994. Los nopales hospederos de la cochinilla fina o cultivada (*Dactylopius coccus* Costa). [The prickly pear hosts of true or cultivated cochineal (*Dactylopius coccus* Costa)]. *Cactaceas y Suculentas Mexicanas* 39(4): 90-95.

Stickney, F.S. 1934 The external anatomy of the red date scale *Phoenicococcus marlatti* Cockerell, and its allies. United States Department of Agriculture Technical Bulletin 404: 1-162.

USDA Phytosanitary Certificate Issuance & Tracking System (PCIT) Phytosanitary Export Database (PEXD). Accessed July 1, 2021: <https://pcit.aphis.usda.gov/pcit/>



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***Comment Period: 08/13/2021 – 09/27/2021**

***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.

Proposed Pest Rating: A