

California Pest Rating Profile

Phalacroccoccus howertoni Hodges & Hodgson: Croton scale

Hemiptera: Coccidae

Pest Rating: A

Comment Period: 03/10/2021 – 04/24/2021

Initiating Event:

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

History & Status:

Background: *Phalacroccoccus howertoni* is a soft scale that was first found in Florida in 2008 and described in 2010 (Hodges and Hodgson, 2010). It is polyphagous and reported to feed on plants in at least 35 families. Hosts include fruit trees (including avocado and mango) and ornamentals (including croton, *Codiaeum variegatum*). (Amarasekare and Mannion, 2011; García et al., 2016).

Worldwide Distribution: *Phalacroccoccus howertoni* is present in the Caribbean (including Barbados, British Virgin Islands, French Guiana, and Guadeloupe), Central America (Guatemala), and the United States (Hawaii, Florida, Puerto Rico, and the U.S. Virgin Islands (Etienne et al., 2014; Franqui; García et al., 2016; Roerk and Matsunaga, 2019; Williams, 2010). Its origin is unclear (Hodges and Hodgson, 2010).

Official Control: *Phalacroccoccus howertoni* is not known to be under official control anywhere.

California Distribution: *Phalacroccoccus howertoni* is not known to be present in California.

California Interceptions: *Phalacrocooccus howertoni* is intercepted occasionally in California on plant material (including fruit and cut foliage) from Hawaii, Puerto Rico, Florida, and South Carolina (California Department of Food and Agriculture).

The risk *Phalacrocooccus howertoni* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** Reported hosts of *P. howertoni* include ornamental plants of urban horticulture in California and avocados. This scale is polyphagous and it may feed on plants in California that it is not currently known to feed on. The known distribution of this scale appears mostly limited to warmer climates, and it is likely that it would be limited to the southern part of the state. 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:** This scale is reported to feed on plants in at least 35 families. Therefore, it receives a High (3) 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:** *Phalacrocooccus howertoni* has high reproductive potential; multiple overlapping generations per year are reported and development takes as little as one month. It overwinters as the adult female and each female can lay approximately 400 eggs (Amarasekare and

Mannion, 2011; Hodges and Hodgson, 2010; Stocks, 2013). This scale could be dispersed via movement of infested plant material. 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:** This scale attacks plants in at least 35 families. In Florida, Stocks reported it to heavily infest *Codiaeum variegatum* and to produce “immense quantities of honeydew,” resulting in sooty mold. If it occurs in high numbers, it could increase crop production costs. Therefore, it receives a **Medium (2)** in this category.

Economic Impact: A, B

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: Medium

- 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 scale attacks ornamental plants. 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 *P. howertoni*: High (13)

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:** *Phalacroccoccus howertoni* 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: **High (13)**

Uncertainty:

The greatest uncertainty is the likelihood of the pest significance of this scale if it was to become established in California. It does not appear to be a significant pest elsewhere in the world, and the number of known hosts that are of significance in California is small. It is possible that the climates in California may not be suitable for *Phalacroccoccus howertoni*.

Conclusion and Rating Justification:

Phalacroccoccus howertoni is a soft scale that attacks at least 35 families of plants. It 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:

Amarasekare, K. G. and Mannion, C. M. 2011. Life History of an exotic soft scale insect *Phalacroccoccus howertoni* (Hemiptera: Coccidae) found in Florida. Florida Entomologist 94:588-593.

California Department of Food and Agriculture. Pest and damage record database. Accessed February 19, 2021: <https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx>

Étienne, J., Matile-Ferrero, D., and Kondo, T. 2014. *Phalacroccoccus howertoni* Hodges & Hodgson (Hemiptera: Coccoidea: Coccidae), a new soft scale record for the island of Guadeloupe. Corpoica Ciencia y Tecnología Agropecuaria 15: 115-118

Franqui, R. Assessing the status of non-native insects and weeds in Puerto Rico. Accessed February 19, 2021:

<https://portal.nifa.usda.gov/web/crisprojectpages/0226965-assesing-the-status-of-non-native-insects-and-weeds-in-puerto-rico.html>

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 February 19, 2020: <http://scalenet.info/catalogue/Phalacrooccus%20howertoni/>

Hodges, G. S., Hodgson, C. J. 2010. *Phalacrooccus howertoni*, a new genus and species of soft scale (Hemiptera: Coccidae) from Florida. Florida Entomologist 93:8-23.

Miller, D., Rung, A., Parikh, G., Venable, G., Redford, A.J., Evans, G.A., and Gill, R.J. 2014. *Scale Insects, Edition 2*. USDA APHIS Identification Technology Program (ITP). Fort Collins, CO. [Accessed 16 September 2020] <http://idtools.org/id/scales/factsheet.php?name=7066>

Roerk, L. S. and Matsunaga, J. N. 2014. Croton scale, *Phalacrooccus howertoni* Hodges and Hodgson. New Pest Advisory 19-02.

Williams, M. L. 2010. Annotated list of the scale insects of Guatemala. Entomologia Hellenica 19:144-152.

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***Comment Period: 03/10/2021 – 04/24/2021**

*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](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.

Pest Rating: A