

California Pest Rating Proposal

Pseudococcus landoi (Balachowsky): Lando mealybug

Hemiptera: Pseudococcidae

Current Rating: Q

Proposed Rating: A

Comment Period: **7/1/2021 – 8/15/2021**

Initiating Event:

Pseudococcus landoi is occasionally intercepted in California. It has not been rated. Therefore, a pest rating proposal is needed.

History & Status:

Background: The mealybug *Pseudococcus landoi* is reported to feed on plants in at least 14 families: Anacardiaceae: *Schinus terebinthifolius*; Araceae: *Anthurium* sp., *Dieffenbachia* sp., *Philodendron* sp.; Euphorbiaceae: *Codiaeum* sp.; Fabaceae: *Phaseolus lunatus*; Heliconiaceae: *Heliconia* sp.; Lauraceae: *Persea americana*; Malvaceae: *Abelmoschus esculentus*, *Theobroma cacao*; Moraceae: *Artocarpus altilis*; Musaceae: *Musa* sp.; Myrtaceae: *Psidium guajava*; Orchidaceae; Piperaceae: *Piper* sp.; Rubiaceae: *Coffea arabica*; Zingiberaceae: *Alpinia* sp., *Zingiber* sp. (Caballero et al., 2019; California Department of Food and Agriculture; Gimpel and Miller, 1996; Kondo and Muñoz, 2016; Vasquez et al., 2002). It is reported to usually occur on the foliage of the host plant. However, Caballero et al. (2019) report it on roots of coffee plants.

Worldwide Distribution: *Pseudococcus landoi* is present in: Caribbean: Barbados, Cuba; North America: Mexico; Central America: Costa Rica, Guatemala, Honduras, Nicaragua, Panama; South

America: Brazil, Colombia, Ecuador, Guyana, Peru (Caballero et al., 2019; Gimpel and Miller, 1996; Vasquez et al., 2019).

Official Control: *Pseudococcus landoi* is considered reportable by the United States Department of Agriculture (U.S. regulated plant pest table).

California Distribution: *Pseudococcus landoi* is not known to be established in California.

California Interceptions: *Pseudococcus landoi* is occasionally intercepted in California on cut *Alpinia* flowers, *Dracaena* plants, and leaves, plants, and cuttings of *Piper* sp. from Hawaii and on rambutan fruit from Honduras (California Department of Food and Agriculture).

The risk *Pseudococcus landoi* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** *Pseudococcus landoi* is found in areas with subtropical to tropical climate. It may be able to establish in coastal southern California, but likely not elsewhere in California. It is polyphagous, and host availability may not be a significant limiting factor. 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:** *Pseudococcus landoi* is polyphagous and reported to feed on plants in at least 14 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:** *Pseudococcus landoi* could be moved on infested plant material. 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.** The polyphagous feeding habits of this mealybug indicate potential for it becoming a pest on a variety of ornamental plants in southern California and raise crop production costs. Avocado is a reported host, but no evidence was found that this mealybug is a significant pest on that plant. Therefore, it receives a **Low (1)** in this category.

Economic Impact: 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: 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.** *Pseudococcus landoi* is highly polyphagous. Infestations could affect ornamental plantings, and this may trigger treatments. Therefore, *P. landoi* receives a **High (3)** in this category.

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 *Pseudococcus landoi*: Medium (10)

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:** *Pseudococcus landoi* 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 (10)

Uncertainty:

There is significant uncertainty regarding the ability of this mealybug to become a pest in California. Reports of significant pest status were not found. However, the polyphagous feeding habits mean a wide variety of plants could be hosts in California and it is difficult to predict if this mealybug will have impacts in this state that exceed what is observed elsewhere.

Conclusion and Rating Justification:

Pseudococcus landoi is a polyphagous mealybug that is not known to be established in California. It may pose a threat to ornamental and native plants in this state. For these reasons, an “A” rating is justified.

References:

Caballero, A., Ramos-Portilla, A. A., Suárez-González, D., Serna, F., Gil. Z. N., and Benavides, P. 2019. Los insectos escama (Hemiptera: Coccoomorpha) de raíces de café (*Coffea arabica* L.) en Colombia, con registros de hormigas (Hymenoptera: Formicidae) en asociación. *Ciencia y Tecnología Agropecuaria* 20:69-92.

California Department of Food and Agriculture. Pest and damage record database. Accessed June 4, 2021:

<https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx>

Gimpel, W. F., Jr., and Miller, D. R. 1996. Systematic analysis of the mealybugs in the *Pseudococcus maritimus* complex. Contributions on Entomology, International 2:1-163.

Kondo, T., and Muñoz, J. A. 2016. Scale insects (Hemiptera: Coccoidea) associated with avocado crop, *Persea americana* Mill. (Lauraceae) in Valle del Cauca and neighboring departments of Colombia. Insecta Mundi 465:1-24.

U.S. regulated plant pest table. Accessed June 4, 2021:

<https://www.aphis.usda.gov/aphis/ourfocus/planthealth/import-information/rppl/rppl-table>

Vasquez, J., Delgado, C., Couturier, G., and Ferrero, D. M. 2002. Les insectes nuisibles au goyavier (*Psidium guajava* L. : Myrtaceae) en Amazonie péruvienne. Fruits 57:323-334.

Responsible Party:

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***Comment Period: 7/1/2021 – 8/15/2021**

*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