

California Pest Rating Profile

Lepidosaphes laterochitinsa Green: an armored scale

Hemiptera: Diaspididae

Pest Rating: A

Comment Period: 12/15/2021 – 01/29/2022

Initiating Event:

Lepidosaphes laterochitinsa is occasionally intercepted. It has not been rated. A pest rating proposal is needed.

History & Status:

Background: *Lepidosaphes laterochitinsa* is an oyster shell-shaped armored scale. It is polyphagous and reported to feed on plants in at least 28 families, including Araceae (including *Aglaonema* sp. and *Epipremnum mirabile*), Araliaceae (including *Schefflera octophylla*), Asparagaceae (including *Dracaena* spp.), Cycadaceae (including *Cycas* sp.), Lauraceae (including *Machilus kusanoi*), Orchidaceae (including *Coelogyne* sp.), Primulaceae (including *Ardisia sieboldii*), Smilacaceae (including *Smilax* sp.), Strelitziaceae (including *Ravenala madagascariensis*), Theaceae (including *Camellia sinensis* and *Eurya japonica*) (García Morales et al., 2016; Malumphy et al., 2012; Stock, 2016; Takagi, 1974). Feeding is reported to cause chlorosis that can lead to leaf death (Stock, 2016).

Worldwide Distribution: *Lepidosaphes laterochitinsa* is widespread in southeastern Asia, including China and Taiwan. It is also reported from Oceania (including Guam). It may be established in Costa Rica, as this scale is intercepted on plant material from this country (CABI Invasive Species Compendium; California Department of Food and Agriculture; Campbell, 2003; Takagi, 1974).

Official Control: *Lepidosaphes laterochitinsa* is considered reportable by the United States Department of Agriculture.

California Distribution: *Lepidosaphes laterochitinsa* is not known to be established in California.

California Interceptions: *Lepidosaphes laterochitinsa* has been intercepted on *Dracaena* spp. nursery stock from Costa Rica (California Department of Food and Agriculture).

The risk *Lepidosaphes laterochitinsa* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** *Lepidosaphes laterochitinsa* is polyphagous and suitable hosts are likely present over much of California. Climate, however, may limit this scale to areas of the state with mild climate (for example, the southern coast). Therefore, *L. laterochitinsa* 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:** *Lepidosaphes laterochitinsa* is polyphagous. 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:** *Lepidosaphes laterochitinos*a can be moved with 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.** *Lepidosaphes laterochitinos*a does not appear to often be reported as a significant pest. However, it is reported to cause damage (chlorosis and leaf death) to plants. It is known to be associated with nursery stock. It could decrease yield and increase production costs of a variety of plants. In addition, it is considered reportable by the United States Department of Agriculture, so its presence in California could impact trade. Therefore, it receives a **High (3)** in this category.

Economic Impact: A, B, C

- 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: High

- 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.** *Lepidosaphes laterochitinsa* feeds on a wide variety of plants. It could cause damage to garden and ornamental plants and trigger treatments. Damage to native plants is possible, especially in the milder portions of the state. Therefore, *L. laterochitinsa* receives a **High (3)** in this category.

Environmental Impact: A, 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 *Lepidosaphes laterochitinsa*: 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:** *Lepidosaphes laterochitinsa* 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: High (13)

Uncertainty:

There are no ongoing surveys for *L. laterochitinsa*, so it is possible that this scale is already established in California. It is possible that this scale may not be able to thrive in California for climatic reasons. It is also possible that it may not be capable of causing significant impacts to native or ornamental plants in this state.

Conclusion and Rating Justification:

Lepidosaphes laterochitinsa is a scale that can feed on a wide variety of plants and is known to cause damage. It therefore poses a threat to the agriculture and environment of California. It is not known to be established in California. For these reasons, an “A” rating is justified.

References:

CABI Invasive Species Compendium. Accessed November 29, 2021:
<https://www.cabi.org/isc/datasheet/30371>

California Department of Food and Agriculture. Pest and damage record database. Accessed November 29, 2021:

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

Campbell, R. K. 2003. Guam. pp. 35-45 in Shine, C., Reaser, J. K., and Gutierrez, A. T. (eds.). Invasive alien species in the Austral Pacific Region: National Reports & Directory of Resources. Global Invasive Species Programme, Cape Town, South Africa.

García Morales, M., Denno, B.D., Miller, D.R., Miller, G.L., Ben-Dov, Y., and N.B. Hardy. 2016. ScaleNet: A literature-based model of scale insect biology and systematics. Accessed November 29, 2017:
<http://scalenet.info>.

Malumphy, C., Halstead, A. J., and Salisbury, A. 2012. First incursion of Chinese mussel scale *Lepidosaphes chinensis* (Hemiptera: Diaspididae) in Europe, with a review of *Lepidosaphes* species found in Britain. British Journal of Entomology and Natural History 25:65-73.

Stock, I. 2016. Pest Alert. *Lepidosaphes laterochitinsa* (Green), a new mussel scale intercepted in a Florida nursery.

Takagi, S. 1974. Diaspididae of Taiwan based on material collected in connection with the Japan-U.S. co-operative science programme, 1965 (Homoptera: Coccoidea) part 2. Insecta Matsumurana- 33:1-142.

Responsible Party:

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***Comment Period: 12/15/2021 – 01/29/2022**

***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