

California Pest Rating Profile

Pseudaonidia duplex (Cockerell): camphor scale

Hemiptera: Diaspididae

Pest Rating: A

Comment Period: **6/15/2021 – 7/30/2021**

Initiating Event:

Pseudaonidia duplex is occasionally intercepted in California on fruit (e.g., citrus and persimmon) and plants (e.g., citrus and magnolia) from the southeastern United States (California Department of Food and Agriculture). It has not been rated. Therefore, a pest rating proposal is needed.

History & Status:

Background: The scale *Pseudaonidia duplex* is reported to feed on plants in at least 30 families. Hosts include Adoxaceae: *Viburnum suspensum*; Anacardiaceae: *Mangifera indica*, *Rhus* sp.; Annonaceae: *Asimina* sp.; Apocynaceae: *Nerium* sp., *Trachelospermum jasminoides*; Aquifoliaceae: *Ilex* sp.; Araliaceae: *Hedera* sp.; Berberidaceae: *Mahonia* sp.; Buxaceae: *Buxus* sp.; Caprifoliaceae: *Lonicera* sp.; Casuarinaceae: *Casuarina* sp.; Celastraceae: *Euonymus* sp.; Ebenaceae: *Diospyros kaki*; Ericaceae: *Rhododendron* sp.; Fabaceae: *Parkinsonia aculeata*; *Cercis canadensis*; *Pueraria thunbergiana*; *Wisteria* sp.; Fagaceae: *Quercus* sp.; Lauraceae: *Cinnamomum camphora*, *Persea americana*; Lythraceae: *Lagerstroemia indica*; Magnoliaceae: *Magnolia kobus*; Malvaceae: *Hibiscus* sp.; Marantaceae: *Maranta arundinacea*; Moraceae: *Ficus* (including *F. carica*); Myrtaceae: *Psidium* sp.; Oleaceae: *Jasminum gracillimum*; *Ligustrum* sp., *Osmanthus* sp.; Proteaceae: *Grevillea* sp.; Rosaceae: *Eriobotrya japonica*, *Photinia serrulata*, *Pyracantha coccinea*, *Prunus* (including *P. persica*), *Pyrus*; Rutaceae: *Citrus* spp., *Ptelea trifoliata*; Sapindaceae: *Koelreuteria paniculata*;

Theaceae: *Camellia japonica*, *C. sasanqua*, *Thea sinensis*; Ulmaceae: *Ulmus parvifolia*; Vitaceae: *Vitis* sp. (Cressman et al., 1935; Dekle, 1964; Dozier, 1924; Kwon et al., 2005; Nohara et al., 2000; Moghaddam, 2013).

On citrus in the southeastern United States, *Pseudaonidia duplex* was reported to occur on the fruit, leaves, and young twigs and to cover the fruit to the extent that the value of the fruit was impacted (Dozier, 1924). In contrast, this scale was reported to be of “little or no consequence” on citrus in Japan (Clausen, 1927). It is reported to kill Japanese persimmon trees, to kill branches and limbs of camphor trees (in New Orleans, Louisiana), and to cause “severe” damage to camellia (Dekle, 1964; Dozier, 1924; Kwon et al., 2005). In Florida, Dekle (1964) reported that this scale did not appear to be causing significant damage, even though it had been present in the state for approximately six years.

Cressman (1935) reported three generations per year in Louisiana.

Worldwide Distribution: *Pseudaonidia duplex* is apparently native to eastern Asia. It is reported from Asia: China, Georgia, Hong Kong, India, Indonesia, Iran, Japan, Republic of Korea, Sri Lanka, and Taiwan; North America: United States (Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, Texas, and Virginia); Oceania: Hawaii, Guam (García et al., 2016; Kwon et al., 2005; Miller, 2005; Moghaddam, 2013; Takagi, 1958; Yang et al., 2008;

Official Control: *Pseudaonidia duplex* is a quarantine pest in Morocco (EPPO global database).

California Distribution: *Pseudaonidia duplex* is not known to be established in California.

California Interceptions: *Pseudaonidia duplex* is occasionally intercepted in California on fruit (e.g., citrus and persimmon) and plants (e.g., citrus and magnolia) from the southeastern United States (California Department of Food and Agriculture).

The risk *Pseudaonidia duplex* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** *Pseudaonidia duplex* is found in areas with climate ranging from temperate to tropical. It may not be well-adapted to drier or higher-altitude areas of California. It is highly polyphagous, and host availability is unlikely to be a significant limiting factor. 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:** *Pseudaonidia duplex* is highly polyphagous and reported to feed on plants in 30 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:** *Pseudaonidia duplex* 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.** Known hosts include a wide variety of ornamental plants grown in California, including *Camellia*, *Ficus*, *Jasminum*, and *Lagerstromia* species. Crop genera that are known

hosts include *Citrus* and *Prunus*. Infestations of this scale could lower crop yield and 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.** *Pseudaonidia duplex* is highly polyphagous and is reported to kill plants. Native plants may be impacted by this scale. Infestations could affect ornamental plantings as well, and this may trigger treatments. Therefore, *P. duplex* 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 *Pseudaonidia duplex*: Medium (12)

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: *Pseudaonidia duplex* 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 (12)

Uncertainty:

There is uncertainty regarding the ability of this scale to significantly impact important crop and/or ornamental plants in California. It does not appear to have become a significant pest in the southeastern United States. There is also uncertainty regarding its potential threat to native plants in California.

Conclusion and Rating Justification:

Pseudaonidia duplex is a polyphagous scale that is known to be able to kill plants. It poses a threat to ornamental, crop, and native plants in California and is not known to be established in this state. For these reasons, an “A” rating is justified.

References:

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Responsible Party:

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***Comment Period: 6/15/2021 – 7/30/2021**

***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\[\[@\]\(mailto:permits@cdfa.ca.gov\)\]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