CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Proposal

Ceroplastes dugesii Lichtenstein: Duges wax scale

Hemiptera: Coccidae

Current Rating: Q

Proposed Rating: A

Comment Period: 8/18/2020 – 10/2/2020

Initiating Event:

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

History & Status:

Background: Adult female *C. dugesii* measure up to 8 mm in length. Like other members of the genus *Ceroplastes*, they are covered with a thick layer of white wax (Malumphy, 2014). The wax of adjacent scales can stick together and can collect dirt, making the scales less distinct. After overwintering, an adult female lays eggs under her body in the spring. These eggs hatch and move to another location on the plant to feed. This species is probably parthenogenic, and there is likely one generation per year in the United States (Gimpel et al., 1974).

Ceroplastes dugesii is highly polyphagous and has been reported to feed on plants in the following families: Anacardiaceae (*Schinus molle*), Annonaceae (*Annona* sp.), Apocynaceae (*Nerium oleander*), Arecaceae (*Phoenix roebelinii* and *Ravenea* sp.), Asteraceae (*Chromolaena odorata*), Burseraceae (*Bursera gemmifera* and *B. simaruba*), Cannabaceae (*Trema mollis*), Combretaceae (*Conocarpus erectus*), Ebenaceae (*Diospyros sylvestris*), Malvaceae (*Anotea flavida*, *Malva* sp., *Malvaviscus arboreus*), Meliaceae (*Guarea guidonia*), Moraceae (*Ficus* sp.), Piperaceae (*Piper* sp.), Polygonaceae (*Coccoloba uvifera*), Verbenaceae (Citharexylum spinosum),and Zodariidae (*Diores*

silvestris) (García et al., 2016; Gimpel et al., 1974; Halbert, 2005; Hamon and Williams, 1984; Malumphy, 2014) .

Like other members of the genus, *C. dugesii* is a pest of ornamental plants (Gimpel et al., 1974). It is reported to cause leaf loss and dieback and to produce large quantities of honeydew, which promotes the growth of sooty mold (Malumphy, 2014).

Worldwide Distribution: *Ceroplastes dugesii* is reported to occur in North America (including Mexico and the United States, where it is found in Florida), the Caribbean (including Puerto Rico, Cuba, Antigua and Barbuda, the Cayman Islands, Barbados, Guadeloupe, and the United States Virgin Islands), Central America (including Panama), and northern South America (Guyana). It is probably native to Mexico and/or the Caribbean (García et al., 2016; Gimpel et al., 1974; Halbert, 2005).

Official Control: *Ceroplastes dugesii* is not known to be under official control anywhere.

California Distribution: *Ceroplastes dugesii* is not known to be present in California.

California Interceptions: *Ceroplastes dugesii* was intercepted twice on palms (*Phoenix roebelinii* and *Ravenea* sp.) from Florida in 2012 (California Department of Food and Agriculture).

The risk *Ceroplastes dugesii* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** Feeds on plants in at least 13 families, including oleander, which is widely planted in California. However, its known distribution is limited to the tropics and subtropics. It is likely that this scale would be limited to the warmer southern coastal areas of the state. 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 in at least 13 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:** *Ceroplastes dugesii* is likely parthenogenic. Adult females are sessile, but this scale could be dispersed via movement of 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**. This scale is reported to be a pest on ornamental plants. 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**. This scale is a pest of ornamental plants. It could trigger treatments. Therefore, *C. dugesii* 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 *Ceroplastes dugesii*: 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:** *Ceroplastes dugesii* 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 (10)

Uncertainty:

It is possible that there are no significant areas in California with climate and hosts suitable for *C. dugesii*.

Conclusion and Rating Justification:

Ceroplastes dugesii is a wax scale pest of ornamental plants. It is not known to be present in California. It poses a threat to ornamental plants in the warmer parts of the state. For these reasons, an "A" rating is justified.

References:

California Department of Food and Agriculture. Pest and damage record database. Accessed July 15, 2020:
https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx

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. http://scalenet.info. Accessed July 14, 2020: http://scalenet.info/catalogue/Ceroplastes%20dugesii/

Gimpel, W. F., Miller, D. R., and J. A. Davidson. 1974. A systematic revision of the wax scales, genus *Ceroplastes*, in the United States (Homoptera; Coccoidea; Coccidae). University of Maryland Agricultural Experiment Station Miscellaneous Publication 841.

Halbert, S. E. 2005. Entomology section. TRI-OLOGY 44:5-9

Hamon, A. B. and M. L. Williams. 1984. The soft scale insects of Florida. Arthropods of Florida and Neighboring Land Areas. Volume 11. Florida Department of Agriculture & Consumer Services, Division of Plant Industry. Gainesville, Florida.

Malumphy, C. 2014. Duges wax scale. *Ceroplastes dugesii*. Accessed July 15, 2020: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwisuYThttDqAhV-qwKHbfuCh8QFjASegQIBRAB&url=http%3A%2F%2Frandd.defra.gov.uk%2FDocument.aspx%3FDocument%3D13217_07Appendix6CeroplastesdugesiiDatasheet.pdf&usg=AOvVaw1PsBnXFu8O_9-erhxoly7n

Responsible Party:

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***Comment Period: 8/18/2020 – 10/2/2020**

***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