CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Proposal

***Geococcus coffeae* Green: coffee root mealybug**

Hemiptera: Pseudococcidae

Current Rating: Q

Proposed Rating: A

Comment Period: 12/30/2021 – 02/13/2022

Initiating Event:

Geococcus coffeae is occasionally intercepted. It has not been rated. A pest rating proposal is needed.

History & Status:

Background: *Geococcus coffeae* lives underground and feeds on plant roots. It's reported hosts include plants in 31 families, including among others: **Anacardiaceae:** *Mangifera* sp.; **Apocynaceae:** *Nerium oleander*; **Arecaceae:** Arecaceae sp.; **Asteraceae:** *Galinsoga parviflora*, *Gerbera* sp.; **Bromeliaceae:** *Ananas comosus*; **Cyperaceae:** *Cladium* sp., *Cyperus rotundus*; **Euphorbiaceae:** *Croton* sp.; **Fabaceae:** *Acacia koa*, *Indigofera anil*; **Iridaceae:** *Crocosmia* sp.; **Musaceae:** *Musa acuminata*; **Poaceae:** Poaceae, sp. of.; **Rubiaceae:** *Coffee arabica*; **Rutaceae:** *Citrus* spp.; **Vitaceae:** *Vitis* sp. (Beardsley, 1966; Caballero et al., 2020; García Morales et al., 2016).

Geococcus coffeae is widely reported to be a pest. For example, it is listed as one of the species that "cause problems in coffee" in Guatemala and it is reported to infest bananas in India (Smitha and Mathew, 2010; van Lenteren, 2020). However, details regarding impact caused by this species were not found. This is possibly for two reasons: First, this mealybug may occur with other root and plant pests, which could make it difficult to isolate damage cause by this species. Second, damage

caused by root-feeding mealybugs is not distinctive and manifests as reduced growth and death (Hara et al., 2001).

Worldwide Distribution: *Geococcus coffeae* is native to Asia (Miller et al., 2002). It has been introduced widely throughout the tropics and is reported from, for example, North America (Mexico and United States: Florida and Hawaii), South America: (Colombia and Suriname), and Oceania (New Caledonia) (Beardsley, 1966; Caballero et al., 2020; Caballero and Ramos-Portilla, 2018; Kuitert and Dekle, 1966; Mille et al., 2016). García Morales et al. (2016) list numerous additional countries in Africa, Asia, the Caribbean, Central America, South America, and Oceania. *Geococcus coffeae* is commonly reported in greenhouses and some reports of occurrence are likely limited to greenhouse infestations (for example, Denmark) (Kozarzhevskaya and Reitzel, 1977).

Official Control: *Geococcus coffeae* is considered reportable by the United States Department of Agriculture (United States Department of Agriculture).

California Distribution: *Geococcus coffeae* is not known to be established in California.

California Interceptions: *Geococcus coffeae* is occasionally intercepted on nursery stock from Florida and Hawaii (California Department of Food and Agriculture).

The risk *Geococcus coffeae* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** *Geococcus coffeae* is polyphagous and suitable hosts are likely present over much of California. Climate, however, may limit this mealybug to areas of the state with mild climate (for example, the southern coast). Therefore, *G. coffeae* 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:** *Geococcus coffeae* 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:** *Geococcus coffeae* 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**. *Geococcus coffeae* is reported to be a pest of various plants, including crops. Although details regarding impact are lacking, this may be for the reasons explained in the Background, above. If it became established in California, 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**. *Geococcus coffeae* 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, *G. coffeae* 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 *Geococcus coffeae*: 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:** *Geococcus coffeae* 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 *G. coffeae*, so it is possible that this mealybug is already established in California. It is possible that this mealybug 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:

Geococcus coffeae is a root mealybug that feeds on a wide variety of plants. It poses a threat to the agriculture and environment of California. It 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: 12/30/2021 – 02/13/2022**

***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.

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