

## California Pest Rating Proposal

### *Rhizoecus americanus* (Hambleton): root mealybug

Hemiptera: Rhizoecidae

Current Rating: Q

Proposed Rating: A

---

Comment Period: **01/06/2022 – 02/20/2022**

---

#### Initiating Event:

*Rhizoecus americanus* is occasionally intercepted on plant material from Florida and Hawaii, including palms and *Ficus lyrata* (California Department of Food and Agriculture). It has not been rated. A pest rating proposal is needed.

#### History & Status:

**Background:** *Rhizoecus americanus* is a polyphagous root-feeding mealybug that has been reported from plants in at least 21 families: **Araceae** (including *Caladium* sp. and *Dieffenbachia* spp.), **Araliaceae** (including *Aralia* sp. and *Dizygotheca elegantissima*), **Arecaceae** (including *Areca* sp., *Arecastrum romanzoffianum*, *Chamaedorea elegans*, and *Phoenix loureirii*), **Asparagaceae** (including *Asparagus sprengeri* and *Chlorophytum* sp.), **Asteraceae** (including *Chrysanthemum* sp.), **Auracariaceae** (including *Auracaria excelsa*), **Combretaceae** (including *Conocarpus erecta*), **Cupressaceae** (including *Chamaecyparis* sp.), **Fabaceae** (including *Calliandra haematocephala*), **Fagaceae** (including *Quercus* sp.), **Gesneriaceae** (including *Isoloma* sp., *Kohleria* sp., and *Saintpaulia ionantha*), **Malvaceae** (including *Hibiscus rosa-sinensis*), **Moraceae** (including *Ficus nitida*), **Myrtaceae** (including *Callistemon* sp. and *Melaleuca leucadendron*), **Orchidaceae**, **Piperaceae** (including *Peperomia pellucida*), **Poaceae** (including *Andropogon virginicus*, *Eragostris maypurensis*),

**Rubiaceae** (including *Coffea arabica*), **Solanaceae** (including *Physalis pubescens*), **Urticaceae**, and **Verbenaceae** (including *Lantana* sp.) (Caballero et al., 2018; Hambleton, 1976; Malumphy, 2014).

*Rhizoecus americanus* was reported to be a nursery pest “of considerable importance” in Florida (Hambleton, 1976). However, details on impacts from this mealybug were not found in the literature.

**Worldwide Distribution:** *Rhizoecus americanus* is reported from: **Caribbean:** Cuba, Jamaica, Puerto Rico, Saint Lucia, and St. Croix; **Central America:** Costa Rica, Honduras, and Panama; **North America:** Mexico and the United States (Florida); **South America:** Colombia and Ecuador (Caballero et al., 2018; Hambleton, 1976; Malumphy, 2014; Miller, 2005). Its origin is not known.

**Official Control:** *Rhizoecus americanus* is a quarantine pest in Morocco (EPPO Global Database).

**California Distribution:** *Rhizoecus americanus* is not known to be present in California.

**California Interceptions:** *Rhizoecus americanus* is occasionally intercepted on plant material from Florida and Hawaii, including palms and *Ficus lyrata* (California Department of Food and Agriculture).

The risk *Rhizoecus americanus* poses to California is evaluated below.

### **Consequences of Introduction:**

1) **Climate/Host Interaction:** *Rhizoecus americanus* is polyphagous and suitable host plants are likely present over much of California. Its known distribution is mostly tropical and subtropical, and it appears that it would be limited in California to the southern coastal areas in outdoor situations. It could thrive in protected (e.g., greenhouse) situations in nurseries over a much larger portion of the state. Therefore, *R. americanus* 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:** *Rhizoecus americanus* 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:** *Rhizoecus americanus* 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.** *Rhizoecus americanus* is reported to be a pest of nursery plants. Detailed reports of impacts were not found, but this is likely because this pest occurs underground and is not easily observed. In addition, damage caused by root-feeding mealybugs is not distinctive and manifests as reduced growth and death (Hara et al., 2001). This mealybug could trigger treatments and increase production costs of nursery plants and possibly others as well, including coffee. In nurseries, inspection of roots may be necessary for diagnosis of a root mealybug infestation, and infested plants may need to be removed (Hara et al., 2001). Therefore, it receives a **Medium (2)** in this category.

**Economic Impact: B, D**

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.** *Rhizoecus americanus* is highly polyphagous. It could impact native plants in warmer parts of California. It could also trigger treatments and impact ornamental plantings in these areas. Therefore, *R. americanus* 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 *Rhizoecus americanus*: 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:** *Rhizoecus americanus* 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 are no ongoing surveys for *R. americanus*, so it is possible that this mealybug is already established in California. It is possible that it may not be able to thrive in California for climatic reasons. Lastly, little specific information was found on damage caused by this mealybug.

## Conclusion and Rating Justification:

*Rhizoecus americanus* is a polyphagous mealybug that may pose a threat to a wide variety of native, ornamental, and crop plants in California. It is not known to be established in this state. For these reasons, an “A” rating is justified.

## References:

Caballero, A., Ramos-Portilla, A. A., Gil, Z. N., and Benavides, P. 2018. Insectos escama (Hemiptera: Coccoomorpha) en raíces de café de Norte de Santander y Valle del Cauca, Colombia y descripción de una nueva especie. *Revista Colombiana de Entomología* 44:120-128.

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

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

EPPO Global Database. Accessed December 3, 2021:

<https://gd.eppo.int>

Hambleton, E. J. 1976. A revision of the New World mealybugs of the genus *Rhizoecus* (Homoptera: Pseudococcidae). United States Department of Agriculture Technical bulletin 1522:1-88.

Hara, A. H., Niino-DuPonte, R., and Jacobsen, C. M. 2001. Root mealybugs of quarantine significance in Hawaii. *Insect Pests*. March 2001. Cooperative Extension Service, College of Tropical Agriculture & Human Resources, University of Hawaii at Manoa. Accessed December 15, 2021:

<https://www.ctahr.hawaii.edu/oc/freepubs/pdf/ip-6.pdf>

Malumphy, C. 2014. An annotated checklist of scale insects (Hemiptera: Coccoidea) of Saint Lucia, Lesser Antilles. *Zootaxa* 3846:69-86.

Miller, D. R. 2005. Selected scale insect groups (Hemiptera: Coccoidea) in the southern region of the United States. *Florida Entomologist* 88:482-501.

## Responsible Party:

Kyle Beucke, 1220 N Street, Sacramento, CA 95814, 916-698-3034, [permits\[@\]cdfa.ca.gov](mailto:permits[@]cdfa.ca.gov)

**\*Comment Period: 01/06/2022 – 02/20/2022**

**\*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.

---

**Proposed Pest Rating: A**