

California Pest Rating Proposal

Crenidorsum aroidephagus Martin & Aguiar: Aroid whitefly

Hemiptera: Aleyrodidae

Current Rating: Q

Proposed Rating: C

Comment Period: **03/07/2022 – 04/21/2022**

Initiating Event:

Crenidorsum aroidephagus is occasionally intercepted on *Anthurium*, *Monstera*, and *Philodendron* spp. from Hawaii. It has not been rated. A pest rating proposal is needed.

History & Status:

Background: *Crenidorsum aroidephagus* is reported to be limited to the plant family Araceae. Hosts include *Anthurium affine*, *A. andreanum*, *A. crenatum*, *A. hookeri*, *A. lindenianum*, *A. longissimum*, *Arecaceae*, sp. of., *Culcasia scandens*, *Epipremnum aureus*, *Monstera deliciosa*, *Nephtytis* sp., *Philodendron gloriosum*, *Rhaphidophora korthalsii*, *Spathiphyllum* sp., and *Syngonium podophyllum*, and *Xanthosoma sagittifolium*. The listing of *Arecaceae* (palms) as a host in Evans (2007) is an error (G. Evans, pers. comm.; Evans, 2007; Martin, 2005; Martin et al., 2001).

In Belize, *C. aroidephagus* is reported to be “cryptic” and to occur sparsely under the leaves of aroids, but it is also reported to occur in large numbers until they are brought “under control” (Martin, 2005). In Germany, this whitefly was found to be infesting unspecified aroids, but the plants were reported not to have been damaged (Outbreak of a potential pest in Germany: *Crenidorsum aroidephagus*).

Worldwide Distribution: **Central America:** Belize, Costa Rica, Panamá; **Macaronesia:** Madeira; **Oceania:** Fiji, Hawaii; **South America:** Brazil (Matsunaga et al., 2019; Martin, 2005; Nishida, 2002). Reports from Europe may refer to greenhouse situations (Anderson and Malumphy, 2011; Martin, 2005).

Official Control: *Crenidorsum aroidephagus* is a quarantine pest in Japan (Quarantine pest list).

California Distribution: *Crenidorsum aroidephagus* is not known to be established in California.

California Interceptions: *Crenidorsum aroidephagus* is occasionally intercepted on plant material, including flowers, of *Monstera*, *Anthurium*, and *Philodendron* species from Hawaii (California Department of Food and Agriculture).

The risk *Crenidorsum aroidephagus* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** *Crenidorsum aroidephagus* is restricted to plants in the family Araceae. These include popular houseplants in California, and some are probably grown outdoors in warmer parts of the state. This whitefly appears to be limited to areas with subtropical or tropical climate. It seems likely that *C. aroidephagus*, if it was able to become established in California at all, would be limited to a very small portion of the state as well as indoors and in greenhouses. Therefore, *C. aroidephagus* 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:** *Crenidorsum aroidephagus* is limited to a single family, Araceae. Therefore, it receives a **Low (1)** 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:** *Crenidorsum aroidephagus* 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.** *Crenidorsum aroidephagus* is considered a pest of aroids. It is not reported to harm its host plants. Therefore, although aroids are popular houseplants in California and some are likely grown outdoors in warmer parts of the state, this whitefly appears unlikely to impact plants in this state. It is considered a quarantine pest in Japan. Therefore, it receives a **Low (1)** in this category.

Economic Impact: 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: 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.** *Crenidorsum aroidephagus* feeds on a single family of plant, Araceae. There are native members of this family in California, but only one of these is terrestrial, *Lysichiton americanus* Hultén & H. St. John (American skunkcabbage). This plant occurs along the northern coast of California, an area unlikely to be hospitable to *C. aroidephagus*. Therefore, *C. aroidephagus* receives a **Low (1)** in this category.

Environmental Impact: Low

- 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: Low (1)

- 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 *Crenidorsum aroidephagus*: Low (6)

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:** *Crenidorsum aroidephagus* 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: Low (6)

Uncertainty:

There are no ongoing surveys for *C. aroidephagus*, so it is possible that this whitefly is already established in California. It is unknown if any of the many aquatic species in the family Araceae in California are potential hosts, although it seems unlikely.

Conclusion and Rating Justification:

Crenidorsum aroidephagus is a whitefly that is only known to feed on aroids. Although its hosts include several genera that are popular ornamental plants, it has not been reported to cause impacts

to them. It also appears to be very unlikely to have environmental impacts. For these reasons, a “C” rating is justified.

References:

Anderson, H. and Malumphy, C. 2011. Rapid assessment of the need for a detailed pest risk analysis for *Crenidorsum aroidephagus*. Version three. The Food and Environment Research Agency. Accessed February 18, 2022:

<https://pra.eppo.int/prab089ce8c-d71-483c-8e31-17e7facf48be>

California Department of Food and Agriculture. Pest and damage record database. Accessed February 14, 2021:

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

Evans, G. A. 2007. Host plant list of the whiteflies (Aleyrodidae) of the World. Version 070611.

Martin, J. H. 2005. Whiteflies of Belize (Hemiptera: Aleyrodidae). Part 2 – A review of the subfamily Aleyrodinae Westwood. *Zootaxa* 1098:1-116.

Martin, J. H., Aguiar, A. M. F., and Baufeld, P. 2001. *Crenidorsum aroidephagus* Martin & Aguiar sp. nov. (Sternorrhyncha: Aleyrodidae), a New World whitefly species now colonizing cultivated Araceae in Europe, Macaronesia and the Pacific region. *Zootaxa* 4:1-8.

Matsunaga, J. N., Howarth, F. G., and Kumashiro, B. R. 2019. New state records and additions to the alien terrestrial arthropod fauna in the Hawaiian Islands. *Proceedings of the Hawaiian Entomological Society* 51:1-71.

Nishida, G. M. 2002. Hawaiian terrestrial arthropod checklist. Fourth edition. Bishop Museum Technical Report 22:1-313.

Outbreak of a potential pest in Germany: *Crenidorsum aroidephagus*. Accessed February 18, 2022:

<https://gd.eppo.int/reporting/article-2958>

Quarantine pest list. Accessed February 14, 2022:

https://www.maff.go.jp/ppsj/law/houki/shorei/E_Annexed_Table1_from_20210428.html

Responsible Party:

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***Comment Period: 03/07/2022 – 04/21/2022**

***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: C