

California Pest Rating Proposal

Sybra alternans Wiedemann: longhorn beetle

Coleoptera: Cerambycidae

Current Rating: Q

Proposed Rating: A

Comment Period: **06/07/2022 – 07/22/2022**

Initiating Event:

Sybra alternans is sometimes intercepted on herbs and *Piper betle* leaves from Hawai'i. This beetle has not yet been rated. A pest rating proposal is needed.

History & Status:

Background: *Sybra alternans* is a small (approximately 10 mm in length) longhorn beetle. The larva burrows through and feeds on plant tissue. Reported hosts include Anacardiaceae: *Mangifera indica*; Apocynaceae: *Plumeria* sp.; Araliaceae: *Panax* sp.; Asteraceae: *Xanthium* sp.; Boraginaceae: *Cordia subcordata*; Caricaceae: *Carica papaya*; Goodeniaceae: *Scaveola* sp.; Lamiaceae: *Ocimum* sp. (basil); Malvaceae: *Gossypium tomentosum*, *Hibiscus tiliaceus*; Moraceae: *Artocarpus incisus*; Musaceae: *Musa* sp.; Myrtaceae: *Psidium guajava*; Euphorbiaceae: *Ricinus communis*; Fabaceae: *Acacia farnesiana*, *Cajanus indicus*; *Crotalaria* sp., *Erythrina* sp.; Orchidaceae: *Cattleya* sp., *Dendrobium* sp.; Poaceae: *Saccharum officinarum* (on smut "whips") (Bowler et al., 2017; Chen et al., 2000; Gressitt and Davis, 1972; Swezey, 1935a; Swezey, 1935b). In some cases, dead plant material is used. For example, in Hawai'i, larvae reported in dead basil, cocklebur (*Xanthium* sp.), and cotton (*Gossypium tomentosum*) stems and twigs (Swezey, 1935a; Swezey, 1935b). However, also in Hawai'i, Chen et al. (2000) reported that *S. alternans* larvae tunneled into and damaged banana fruits. In Florida, where it has been established since at least 1992, impacts have not been reported (Haack, 2006).

Worldwide Distribution: *Sybra alternans* is native to Asia and reported from: **Asia:** Indonesia, Laos, Malayan Peninsula, Myanmar, Philippines, Taiwan, Vietnam; **North America:** United States (Florida); **Oceania:** Easter Island and Hawaii (Haack, 2006; Mondaca et al., 2016; Rahmat, 2019). The Florida and presumably some or all of the records from Oceania represent introductions.

Official Control: *Sybra alternans* is not known to be under official control anywhere.

California Distribution: *Sybra alternans* is not known to be established in California (California Department of Food and Agriculture).

California Interceptions: *Sybra alternans* has been intercepted on herbs and *Piper betle* leaves from Hawai'i (California Department of Food and Agriculture).

The risk *Sybra alternans* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** This polyphagous beetle could likely find food over most of the state of California. It appears to be limited in distribution to tropical and subtropical areas. It is likely that if it was able to establish in California, it would be limited to a small area, perhaps coastal southern California. 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:** *Sybra alternans* feeds on a wide variety of plants. 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:** *Sybra alternans* could be moved with infested plant material. It presumably can fly. 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:** Although reports suggest that *S. alternans* can feed on dead plant material, there are also reports of damaging attacks on live plants, for example, banana fruits. The polyphagous feeding habits of this beetle suggest it could potentially impact many plants in California, including crops and nursery plants, reducing yield and increasing 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:** *Sybra alternans* is unlikely to become established in a large portion of California. Climate is likely to limit it to perhaps parts of coastal southern California. This beetle is reported to attack living plants and its broad feeding preferences suggest that rare native plants could also be attacked. Gardens and ornamental plantings could be affected as well. Therefore, *S. alternans* receives a **High (3)** in this category.

Environmental Impact: B, 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 *Sybra alternans*: Medium (11)

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:** *Sybra alternans* 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 (11)

Uncertainty:

Sybra alternans may not be capable of establishing anywhere in California for climate reasons. There is also significant uncertainty regarding its potential to impact living plants in California. Reports of impacts attributed to this beetle are sparse and appear to be highly localized. It has been present in Florida since 1992 and no reports are known of significant impacts there.

Conclusion and Rating Justification:

Sybra alternans is a beetle that is not known to be established in California. It appears unlikely to be capable of establishing in more than perhaps a small fraction of the state. However, it poses a risk (with a high degree of uncertainty) to a wide variety of native and agricultural plants. For these reasons, an “A” rating is justified.

References:

Bowler, P. A., Trujillo, E. E., and Beardsley, J. W., Jr. 1977. Insect feeding on sugarcane smut in Hawaii. 1977. Proceedings of the Hawaiian Entomological Society. 22:451-456.

California Department of Food and Agriculture. Pest and damage record database. Accessed March 10, 2022:

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

Chen, H., Ota, A., and Fonsah, G. 2000. Infestation of *Sybra alternans*, (Cerambycidae: Coleoptera), a long-horned beetle in a Hawaii banana plantation. Hawaii Agriculture Research Center Tropical Fruit Report 4:1-7.

Gressitt, J. L. and Davis, C. J. 1972. Seasonal occurrence and host-lists of Hawaiian Cerambycidae. U.S. International Biological Program Technical Report:5

Haack, R. A. 2006. Exotic bark- and wood-boring Coleoptera in the United States: Recent establishments and interceptions. Canadian Journal of Forest Research 36:269-288.

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Swezey, O. H. 1935b. Proceedings of the Hawaiian Entomological Society. 9:96-98.

Responsible Party:

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***Comment Period: 06/07/2022 – 07/22/2022**

***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