CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Profile for

Allopeas clavulinum (Potiez & Michaud): spike awlsnail

Gastropoda: Achatinidae

Pest Rating: B

Comment Period: 01/09/2025 – 02/23/2025

Initiating Event:

Allopeas clavulinum was found in a greenhouse in Los Angeles County. As a member of the snail family Achatinidae, it automatically is A-rated unless otherwise rated. A pest rating proposal is needed.

History & Status:

Background:

Allopeas clavulinum is reported to occur in agricultural and natural settings. It is found in leaf litter and reportedly primarily feeds on that material, although it is also reported to feed on living plants. Most references suggest it does not pose a risk to living plants, although Tripathi (2021) reports that it feeds "heavily" on seedlings and saplings (Brodie and Barker, 2011; Nurinsiyah and Hausdorf, 2019). It has been present in Hawaii since at least as early as 1906 and can currently be found in nurseries in that state, yet no reports were found of significant impacts to plants there (Hayes et al., 2012).

Allopeas clavulinum was shown to be an intermediate host for *Angiostrongylus cantonensis* in an experiment by Sakamoto and Uga (2012).

Worldwide Distribution: *Allopeas clavulinum* is possibly native to East Africa (Brodie and Barker, 2011). It is reported from: **Asia:** Japan, Indonesia, Malaysia, Philippines; **North America:** United States (Florida, Tennessee); **Oceania:** Widespread, including American Samoa, Caroline Islands, Fiji, Hawaii (Brodie and Barker, 2011; Cowie et al., 2002; Dinkins and Dinkins, 2018; Foon and Marzuki, 2023; Hayes et al., 2012; Lee, 2014; Nurinsiyah and Hausdorf, 2019; Perez et al., 2023; Rundell and Czekanski-Moir, 2015; Sakamoto and Uga, 2012).

Official Control: *Allopeas clavulinum* is considered a quarantine pest in Israel (EPPO Global Database, 2024).

California Distribution: *Allopeas clavulinum* is not known to be present in the environment in California.

California Interceptions: *Allopeas clavulinum* has been intercepted in California from Florida (California Department of Food and Agriculture, 2024).

The risk *Allopeas clavulinum* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** *Allopeas clavulinum* is reported to feed on leaf litter and living plants. It is presumed suitable food is widespread in California. It is possible that (lack of) moisture may be a limiting factor in California for this snail, and possibly low temperatures. It is possible that this snail may be able to establish in portions of the state, for example, irrigated residential areas and possibly some agricultural settings (including greenhouses). Therefore, *A. clavulinum* 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:** *Allopeas clavulinum* feeds on leaf litter and reportedly living plants as well. 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:** *Allopeas clavulinum* is evidently moved easily, likely through nursery and other pathways. 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**. Apart from Tripathi (2021), not a single report was found of this snail causing significant impacts to living plants. The presence of this snail in Hawaii and Florida, combined with the lack of reports of impacts in those states, suggests that this snail poses very little economic risk to California. It is considered a quarantine pest in Israel. It can be an intermediate host of rat lungworm, although rat lungworm is not present in California. Therefore, it receives a **Medium (2)** in this category.

Economic Impact: C, E

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**. The presence of this snail in California could possibly impact native snail species through competition. Therefore, *A. clavulinum* receives a **Medium (2)** in this category.

Environmental Impact: A

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: Medium (2)

– 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 *Allopeas clavulinum*: 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:** *Allopeas clavulinum* is not known to be established in the environment 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: 11 (Medium)

Uncertainty:

There is significant uncertainty regarding the distribution of this snail in California. It is present in Hawaii and Florida where it is present in nurseries and it has been intercepted from Florida. There is a significant likelihood that it is present in other locations, possibly outdoors, in California but has gone undetected. There is some uncertainty regarding the potential for this snail to impact living plants. The heavy feeding reported by Tripathi (2021) is in conflict with the general lack of reports of such impacts.

Conclusion and Rating Justification:

Allopeas clavulinum is a snail that has been introduced and established widely across the world but has generally not been reported to cause impacts to living plants. The possibility that it is elsewhere in California (whether established in the environment or in a greenhouse or nursery) cannot be eliminated with a good degree of confidence. For these reasons, a "B" rating is justified.

References:

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California Department of Food and Agriculture. Pest and damage record database. Accessed July X, 2024:
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Sakamoto, M., Uga, Shoji. 2012. Epidemiological survey of *Angiostrongylus cantonensis* in Port Island, Hyogo Prefecture, Japan. pp. 54-59 in (M. Tokoro and S. Uga, eds.) Parasitic Zoonoses in Asian-Pacific Regions.

Tripathi, A. 2021. Eco-friendly management of *Allopeas clavulinum* (spike awl snail) through the application of herbal pesticide. International Journal of Scientific Research in Biological Sciences 8:58-61.

Responsible Party:

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***Comment Period: 01/09/2025 – 02/23/2025**

***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.

Pest Rating: B