CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Profile for

***Aspidiella sacchari* (Cockerell): sugarcane scale**

Hemiptera: Diaspididae

Previous Pest Rating: Q

Pest Rating: A as of 02/20/2022

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

Initiating Event:

Aspidiella sacchari is occasionally intercepted in California on sugarcane and palms, especially from Florida. It has not been rated. Therefore, a pest rating proposal is needed.

History & Status:

Background: The scale *Aspidiella sacchari* lives under the leaf sheaths of its host plants. It can be present both above as well as below ground (Miller and Davidson, 2005). It is reported to feed on plants in at least 12 families. Reported host families and genera include: Anacardiaceae: *Mangifera*; Annonaceae: *Annona*; Arecaceae: *Cocos*; Asparagaceae: *Dracaena*; Bromeliaceae: *Ananas*; Cannaceae: *Canna*; Costaceae: *Costus*; Dioscoreaceae: *Dioscorea*; Flacourtiaceae: *Casearia aculeata*; Moraceae: *Ficus*; Oleaceae: *Ligustrum*; Poaceae: *Andropogon*, *Arundo*, *Axonopus*, *Chloris*, *Cymbopogon*, *Cynodon*, *Digitaria*, *Eremochloa*, *Neyraudia*, *Opizia*, *Panicum*, *Paspalum*, *Pennisetum*, *Saccharum*, *Sporobolus*, *Stenotaphrum*, *Tripsacum*, *Vetiveria* (Griselda et al., 2002; Miller and Davidson, 2005; Novoa et al., 2011; Varshney, 2002).

This scale is a pest of sugarcane in the Caribbean and Florida and of lawn grasses in Florida (Alam, 1985; Dekle, 1965). It appears to only be a minor pest in most cases (Miller and Davidson, 2005).

Worldwide Distribution: *Aspidiella sacchari* is widespread and reported from Africa (Comoros), Asia (India and Sri Lanka), North America (Mexico and the United States, including Alabama, Florida, and Texas), South America (including Venezuela), the Caribbean, and Oceania (including Hawaii) (Alam, 1985; Beardsley, 1966; D'Ascoli, 1971; Griselda et al., 2002; Kumashiro et al., 2001; Matile, 1978; Sugarman, 1972; Varshney, 2002; Waltman et al., 2016).

Official Control: *: Aspidiella sacchari* is considered a quarantine pest in Iran (List of plant quarantine pests in I.R. Iran).

California Distribution: *Aspidiella sacchari* is not known to be established in California.

California Interceptions: *Aspidiella sacchari* is occasionally intercepted on sugarcane and palms, especially from Florida (California Department of Food and Agriculture).

The risk *Aspidiella sacchari* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** *Aspidiella sacchari* appears to be limited to areas with tropical and subtropical climates. This scale is polyphagous and hosts, which include Bermuda grass and Saint Augustine grass, are probably present in much of the state. Climate will likely limit this scale to southern coastal areas, if it is able to establish at all. 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:** *Aspidiella sacchari* is polyphagous and reported to feed on plants in at least 12 families. 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:** *Aspidiella sacchari* could be moved on 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**. Sugarcane is grown on a small scale in a part of California (the Imperial Valley) where this scale seems unlikely to be capable of establishing in. Known host species include lawn grasses grown widely in California, including Bermuda grass and Saint Augustine grass. Ornamental plants in other families (palms, for example) could be impacted. Production costs of ornamental plants may increase if the scale becomes established in California. Therefore, it receives a **Low (1)** in this category.

Economic Impact: 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: 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**. Infestations of *A. sacchari* on grasses and ornamental plants could lead to private treatments. There are native grasses in California that are in genera known to be attacked by this scale, but the rare California grasses in these genera are not found in the southern coastal portion of the state and are unlikely to be at risk. Therefore, *A. hartii* receives a **High (3)** in this category.

Environmental Impact: 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 *Aspidiella hartii*: Medium (10)

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:** *Aspidiella sacchari* 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 (10)

Uncertainty:

There are two important areas of uncertainty. First, this scale is mostly limited to parts of the world with tropical or subtropical climates. It seems likely that it would be restricted to the southern coastal portions of the state if it is able to establish at all. Secondly, this scale is reported to mainly be a minor pest, although it could be significant in certain situations in California.

Conclusion and Rating Justification:

Aspidiella sacchari is a polyphagous scale that feeds on grasses grown widely in California. It feeds on a variety of other plants as well and could attack ornamental or native plants in California that are

not yet known to be hosts. It is not known to be in California. For these reasons, an "A" rating is justified.

References:

Alam, M. M. 1985. The biological control of sugar cane, vegetable and other crop pests in Barbados and the eastern Caribbean islands. pp. 238-244 *in* Joint Proceedings of the 21st Annual Meeting of the Caribbean Food Crops Society and the 32nd Annual Meeting of the American Society for Horticultural Science – Tropical Region. Caribbean Food Crops Society, Isabela, Puerto Rico.

Beardsley, J. W. 1966. Homoptera: Coccoidea. Insects of Micronesia 6:377-562.

California Department of Food and Agriculture. Pest and damage record database. Accessed March 12, 2021:
https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx

D'Ascoli, A. 1971. The armored scale insects of Venezuela (Homoptera: Coccoidea: Diaspididae). Ph.D. dissertation. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Dekle, G. W. 1965. Florida armored scale insects. Arthropods of Florida and Neighboring Land Areas. Volume 3. Florida Department of Agriculture, Gainesville, Florida.

Griselda, G. -G., Myartseva, S., Ruíz-Cancino, E., and Coronado-Blanco, J. M. 2002. Nuevos registros de Coccoidea (Homoptera) de Tamaulipas y Mexico. pp. 257-259 *in* XXV Congreso Nacional de Control Biológico, Abstracts (14–15 November 2002). Hermosillo, Sonora, México.

Kumashiro, B. R., Heu, R. A., Nishida, G. M., and Beardsley, J. W. 2001. New state records of immigrant insects in the Hawaiian Islands for the year 1999. Proceedings of the Hawaiian Entomological Society 35:170-184.

List of plant quarantine pests in I.R. Iran. Accessed March 16, 2021:
https://www.ippc.int/static/media/files/reportingobligation/2015/10/31/pest_list.pdf

Matile, L. 1978. Faune Entomolgique de L'Archipel des Comores. Museum of Natural History, Paris, France.

Miller, D. R. and Davidson, J A. 2005. Armored scale insect pests of trees and shrubs. Cornell University Press, Ithaca, New York.

Novoa, N. M., Hamon, A., Evans, G., Kondo, T., Oliver, P. H., Marrero, A. H., and Alonso, A. A. 2011. Los cocoideos (Hemiptera: Sternorrhyncha: Coccoidea) presents en la Cordillera de Guaniguanico, Pinar del Río, Cuba,y la relación con sus hospedanted. Insecta Mundi 183:1-25.

Sugarman, B. B. 1972. Insects and other arthropods from Kwajalein Atoll (Marshall Islands). Proceedings of the Hawaiian Entomological Society 21:271-286.

Varshney, R. K. 2002. A check-list of the scale insects and mealybugs of south Asia (part 2). Records of the Zoological Survey of India, Occasional Paper 191:1-147.

Waltman, K. G., Ray, C. H., Jr., Williams, M. L. 2016. The armored scale insects (Hemiptera Diaspididae) of Alabama, USA. REDIA 99:229-231.

Responsible Party:

Kyle Beucke, 2800 Gateway Oaks, Suite #200, Sacramento, CA, 95833, 916-403-6741, 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.

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: A