

California Pest Rating Profile for  
*Dialeurodes kirkaldyi* (Kotinsky): Arabian jasmine whitefly

Hemiptera: Aleyrodidae

Previous Pest Rating: Q

Pest Rating: A as of 03/06/2022

---

Comment Period: 01/20/2022 – 03/06/2022

---

**Initiating Event:**

*Dialeurodes kirkaldyi* is occasionally intercepted. It has not been rated. A pest rating proposal is needed.

**History & Status:**

**Background:** *Dialeurodes kirkaldyi* is a whitefly that is reported to have hosts in at least 16 families:

**Apocynaceae:** *Allamanda neriifolia*, *Beaumontia grandiflora*, *Plumeria acuminata*, *P. acutifolia*, *Tabernaemontana* sp., *Trachelospermum jasminoides*; **Combretaceae:** *Terminalia* sp.;

**Convulvulaceae:** sp. of; **Lamiaceae:** *Premna integrifolia*; **Lauraceae:** *Persea americana*; **Loganiaceae:** *Fragraea fragrans*; **Lythraceae:** *Lagerstroemia indica*; **Malpighiaceae:** *Hiptage mandablota*;

**Malvaceae:** *Malva sylvestris*; **Myrtaceae:** *Psidium guajava*, *Syzygium cumini*; **Nyctaginaceae:**

*Bougainvillea* sp.; **Oleaceae:** *Jasminum* spp. (including *J. sambac*), *Ligustrum walkeri*; **Ranunculaceae:**

*Ranunculus repens*; **Rosaceae:** *Rosa* sp.; **Rubiaceae:** *Coffea arabica*, *Gardenia tahitiensis*, *Morinda citrifolia*; **Rutaceae:** *Citrus paradisi*, *C. sinensis* (El-Amir et al., 2020; Russell, 1964; Malumphy and

Mifsud, 2012; Sundararaj and Dubey, 2006; Tayyib et al., 2019; Vasquez et al., 2010). Literature suggests this whitefly prefers *Jasminum* and *Morinda* species. It is reported to have three generations per year in Egypt (Helmi, 2005).

*Dialeurodes kirkaldyi* is reported to be a pest of jasmine and *Morinda citrifolia*. Infested *Morinda citrifolia* leaves were brown and “crinkled” (Zimmerman, 1948). Infestations on jasmine were reported to cause stunted growth and reduced flowering (Sanchez et al., 2010). This whitefly was reported to vector the causative agent of yellow ring mosaic disease of jasmine (El-Amir et al., 2020).

**Worldwide Distribution:** The origin of *Dialeurodes kirkaldyi* is uncertain. It is reported from **Africa:** Egypt, Ghana; **Asia:** China, India, Iraq, Japan, Lebanon, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Syria, Taiwan; **Caribbean:** Cuba, Jamaica, Trinidad and Tobago; **Europe:** Malta; **Macaronesia:** Azores; **North America:** United States (Florida and Texas); **Oceania:** Australia, Caroline Islands, Hawaii, Marianas Islands, Palau, Society Islands, Tuamotu Islands; **South America:** Guyana (Al-Mallo and Abdul-Rassoul, 2017; Hodges and Evans, 2005; Russell, 1964).

**Official Control:** *Dialeurodes kirkaldyi* is not known to be under official control anywhere.

**California Distribution:** *Dialeurodes kirkaldyi* is not known to be established in California.

**California Interceptions:** *Dialeurodes kirkaldyi* is occasionally intercepted on plant material (including *Gardenia* sp., *Jasminum* sp., and *Morinda* sp.) from Alabama, Florida, Hawaii, and Texas (California Department of Food and Agriculture).

The risk *Dialeurodes kirkaldyi* poses to California is evaluated below.

## **Consequences of Introduction:**

- 1) **Climate/Host Interaction:** *Dialeurodes kirkaldyi* is somewhat polyphagous. Its preferred hosts include *Jasmine* spp., which are commonly grown in California, and *Morinda citrifolia* (noni), which is grown in southern California. Other hosts include avocado and citrus. Suitable hosts are

likely present over much of California. However, climate may limit *D. kirkaldyi* to central and southern California. Therefore, *D. kirkaldyi* 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:** *Dialeurodes kirkaldyi* 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:** *Dialeurodes kirkaldyi* 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.** *Dialeurodes kirkaldyi* is a pest of jasmine and *Morinda citrifolia*, both plants grown in California. Known hosts also include citrus, avocado, and coffee, important crops in California. If *D. kirkaldyi* became established in California, it could decrease yield and increase production costs of these and other plants. Therefore, it receives a **High (3)** 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.** *Dialeurodes kirkaldyi* feeds on a wide variety of plants, including jasmine, which is a common ornamental plant in California, as well as citrus and avocado. It could cause damage to garden and ornamental plants and possibly commercial crops as well and trigger treatments. Damage to native plants is possible, especially in the milder portions of the state. Therefore, *D. kirkaldyi* 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 *Dialeurodes kirkaldyi*: High (13)**

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:** *Dialeurodes kirkaldyi* 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: High (13)

### **Uncertainty:**

There are no ongoing surveys for *D. kirkaldyi*, so it is possible that this whitefly is already established in California.

## Conclusion and Rating Justification:

*Dialeurodes kirkaldyi* is a whitefly that feeds on a variety of plants, including citrus, avocado, coffee, and jasmine, and it is reported to cause damage to its hosts. It poses a threat to the agriculture and environment of California. It is not known to be established in this state. For these reasons, an “A” rating is justified.

## References:

Al-Mallo, I. M., and Abdul-Rassoul, M. S. 2017. Host plants and distribution of some whiteflies species (Hemiptera, Aleyrodidae) in the middle of Iraq. Bulletin of the Iraq Natural History Museum 14:295-300.

California Department of Food and Agriculture. Pest and damage record database. Accessed December 21, 2021:

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

El-Amir, S. M., Abd El-Mageed, S. A. M., and Shaaban, A. -R. 2020. Bionomics of the jasmine whitefly *Dialeurodes kirkaldyi* (Hemiptera: Aleyrodidae) in Egypt as well as seasonal abundance of this pest and its parasitoid on jasmine. Egyptian Journal of Plant Protection Research Institute 3:896-905.

Helmi, A. 2005. Some ecological aspects of two whitefly species infesting Arabian jasmine shrubs in Egypt (Hemiptera: Sternorrhyncha: Aleyrodidae). Arab Universities Journal of Agricultural Sciences 13:951-962.

Hodges, G. S. and Evans, G. A. 2005. An identification guide to the whiteflies (Hemiptera: Aleyrodidae) of the southeastern United States. Florida Entomologist 88:518-534.

Malumphy, C. and Mifsud, D. 2012. Faunal review of the whiteflies of the Maltese Archipelago (Hemiptera, Aleyrodidae). Bulletin of the Entomological Society of Malta 5:35-47.

Russell, L. M. 1964. *Dialeurodes kirkaldyi* (Kotinsky), a whitefly new to the United States (Homoptera: Aleyroridae). The Florida Entomologist 47:1-4.

Sanchez, F. C., Jr., Santiago, D., and Khe, C. P. 2010. Production management practices of jasmine (*Jasminum sambac* [L.] Aiton) in the Philippines. Journal of the International Society for Southeast Asian Agricultural Sciences 16:126-136.

Sundararaj, R. and Dubey, A. K. 2006. A review of the whitefly genus *Dialeurodes* Cockerell (Aleyrodidae: Hemiptera) with descriptions of two new species from India. Journal of the Bombay natural History Society 103:62-67.

Tayyib, M., Mukhtar, M., Yousuf, M. J., and Akbar, M. 2019. Contribution to the study of genus *Dialeurodes* (Homoptera: Aleyrodidae) from Pakistan. Pakistan Entomologist 41:35-38.

Vasquez, L. L., Jiménez, R., and de la Iglesia, Martha. 2010. Ocurrencia de moscas blancas (Hemiptera: Aleyrodidae) y sus enemigos naturales en frutales cultivados en Cuba. Revista CitriFrut 27:16-22.

Zimmerman, E. C. 1948. Insects of Hawaii. Volume 5. Homoptera: Sternorhyncha. University of Hawaii Press, Honolulu, Hawaii.

## Responsible Party:

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

**\*Comment Period: 01/20/2022 – 03/06/2022**

### **\*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.

---

**Pest Rating: A**