

Mini Alert List datasheet on *Fiorinia phantasma* (Hemiptera: Diaspididae)

Added to the EPPO Alert List in 2018 - Deleted in 2022

Reasons for deletion:

Fiorinia phantasma has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries. *F. phantasma* is a tropical, sub-tropical palm pest. In 2022, the Working Party on Phytosanitary Regulations agreed that it could be deleted, considering that sufficient alert has been given.

***Fiorinia phantasma* (Hemiptera: Diaspididae)**

Why: The attention of the EPPO Secretariat was attracted by colleagues from USDA-PPQ-APHIS to the emergence of *Fiorinia phantasma* (= *Fiorinia coronata* - Hemiptera: Diaspididae) in the USA. *F. phantasma* is a polyphagous pest of ornamental plants, with a preference for palm tree species. It was initially described from specimens collected in 1914 on *Neolitsea* sp. in the Philippines (Mount Makiling, Luzon Island). It was found in 2004 in Hawaii (US), first on the island of Oahu infesting landscape palm trees, and then on other ornamentals (in nurseries and the landscape) on the island of Maui. A recent taxonomic review of this scale species concluded that *Fiorinia coronata* was a synonym of *F. phantasma*, and that this scale was present in more than 20 countries, thus suggesting that it is spreading. Finally, heavy infestations *F. phantasma* were discovered in March 2018 in continental USA, in Florida (Miami-Dade county) on *Phoenix canariensis*. Considering the polyphagy of *F. phantasma* and its capacity to be moved between continents on plant material, the EPPO Secretariat felt that it could usefully be added to the EPPO Alert List.

Where: *F. phantasma* is thought to originate from South-East Asia.

EPPO region: Absent. However, incursions have been reported on glasshouse plants in France (a 'crocodile farm' glasshouse) and the Netherlands (a nursery), as well as in the United Kingdom on a potted bamboo plant in a restaurant. These incursions have not led to the establishment of the pest.

Africa: Reunion.

North America: USA (Florida, Hawaii).

Central America and the Caribbean: Grenada, Saint Martin.

Asia: China (Hong Kong), Indonesia (Irian Jaya), Malaysia (West), Maldives, Philippines, Singapore. Infested plants have been intercepted by several countries (e.g. the Republic of Korea, USA) on imported plant material from Thailand, Taiwan and Vietnam, but the presence of the pest in these countries could not be confirmed by other sources.

Oceania: American Samoa, French Polynesia, Guam, Micronesia, Nauru, New Caledonia, Papua New Guinea, Solomon Islands.

On which plants: *F. phantasma* is polyphagous and has been recorded on more than 20 plant families, however it has a marked preference for palm species (Arecaceae) such as: areca-nut palm (*Areca catechu*), coconut (*Cocos nucifera*), date palm (*Phoenix dactylifera*), raffia palm (*Raphia farinifera*), and ornamental palm trees (e.g. *Areca*, *Dypsis*, *Hyophorbe*, *Nypa*, *Phoenix sylvestris*, *Veitchia merrillii*, *Wallichia*, *Wodyetia bifurcata*). Its host range includes a wide range of ornamentals (e.g. *Cassia*, *Ficus benjamina*, *Heliconia caribaea*, *Ligustrum japonicum*, *Monstera deliciosa*, *Murraya paniculata*, *M. koenigi*, *Osmanthus*, *Pandanus*, *Pittosporum tobira*, *Plumeria*, *Ravenala madagascariensis*) and some fruiting species such as: *Artocarpus altilis* (breadfruit), *Litchi chinensis* (litchi), and *Mangifera indica* (mango).

Damage: *F. phantasma* infests the undersides of leaves of its host plants. However, when populations reach high densities, crawlers begin to colonize the upper leaf sides. Feeding damage by *F. phantasma* causes yellow blotches on the upper leaf surfaces of host plants. As the scale population increases, intense feeding damage to the foliage causes leaf drop, loss of plant vigour and stunting. Heavy infestations and damage have been reported from palm trees in Hawaii, Grenada and Maldives. Adult females of *F. phantasma* are approximately 1.25 mm long, ‘mussel-shaped’ and inconsistently show red stripes, running across their width. Females are pupillarial (as is the case for other *Fiorinia* species), which means that they shrink in size, encased in their second shed skin. Male scales are white.

Pictures of *F. phantasma* can be viewed on the Internet:

http://ucfnfanews.ucanr.edu/Articles/Insect_Hot_Topics/INSECT_HOT_TOPICS_New_scale_insect_in_Hawaii/

<https://hdoa.hawaii.gov/pi/files/2013/01/Fiorinia-phantasma-NPA.pdf>

https://www.freshfromflorida.com/content/download/79840/2332158/Pest_Alert_-_Fiorinia_phantasma.pdf

Dissemination: Crawlers can move over short distances and wind can facilitate species dispersal (but no detailed data could be found). Over long distances, trade of infested plants is suspected to play an important role in the pest spread. In particular, several countries have intercepted *F. phantasma* on imported ornamentals.

Pathways: Plants for planting, cut foliage? of host plants from countries where *F. phantasma* occurs.

Possible risks: *F. phantasma* is a polyphagous pest which can feed on many species that are grown for ornamental purposes in the EPP0 region. In addition, its host range includes date palm (*P. dactylifera*) which is an economically important crop in parts of the EPP0 region. In Hawaii, *F. phantasma* is considered to be a major pest of ornamental and landscape plants and has negative impacts on the local nursery and landscape industry. Its recent introduction into Florida is also considered as a serious threat, in particular for palm trees that are widely planted. Chemical control of scales is usually difficult. Biological control might be an option, as in Hawaii parasitoids (*Aphytis* sp., Aphelinidae) and predators (*Telsimia nitida* (Coccinellidae), *Cybocephalus nipponicus* (Cybocephalidae), *Chrysoperla comanche* (Chrysopidae), and *Aleurodothrips fasciapennis* (Phlaeothripidae)) have been observed attacking *F. phantasma*, but their efficacy remains to be studied. The recent spread of *F. phantasma* to different countries, its interceptions on imported plant material, and its recent incursions demonstrate that it has the potential to enter the EPP0 region. However, more studies would be needed on its potential of establishment in the EPP0 region. Considering that it is a ‘tropical’ pest, it is probably not able to survive winter conditions in most parts of the EPP0 region, but it could still be a threat to many glasshouse ornamentals that are high value crops.

Sources

Cockerell TDA, Robinson E (1915) Descriptions and records of Coccidae. *Bulletin of the American Museum of Natural History* 34, 105-113.

Garcia JN (2011) *Fiorinia phantasma* Cockerell and Robinson (Hemiptera: Diaspididae), an armored scale pest new to Hawaii. *Proceedings of the Hawaiian Entomological Society* 43, 59-61.

Germain JF, Minatchy J, Pastou D, Bagny P, Méron S, Pallas R, Quilici S, Matile-Ferrero D (2014) An updated checklist of the scale insects from Réunion Island. *Acta Zoologica Bulgarica* suppl. 6, 21-27.

INTERNET

Ahmed MZ, Miller DR (2018-04) First U.S. continental Record of *Fiorinia phantasma* Cockerell & Robinson (Hemiptera: Diaspididae), Phantasma scale, potential pest of palms

and ornamentals plants. Pest Alert. Florida Department of Agriculture and Consumer Services.

https://www.freshfromflorida.com/content/download/79840/2332158/Pest_Alert_-_Fiorinia_phantasma.pdf

ScaleNet. *Fiorinia phantasma*. <http://scalenet.info/catalogue/Fiorinia%20phantasma/>

University of California. Bethke (2012-09) Insect hot topics: new scale insect in Hawaii.

http://ucnfanews.ucanr.edu/Articles/Insect_Hot_Topics/INSECT_HOT_TOPICS__New_scale_insect_in_Hawaii/

Malumphy C (2013) First incursion of crown scale *Fiorinia coronata* Williams & Watson (Hemiptera: Diaspididae) in England, with a review of *Fiorinia* species detected in Britain and a key to their identification. *Entomologist's Gazette* **64**, 269-276.

Mille C, Henderson RC, Cazères S, Jourdan H (2016) Checklist of the scale insects (Hemiptera: Sternorrhyncha: Coccoomorpha) of New Caledonia. *Zoosystema* **38** (2), 129-176. <http://dx.doi.org/10.5252/z2016n2a1>

State of Hawaii. Department of Agriculture (2011-10) *Fiorinia phantasma* Cockerell & Robinson. New Pest Advisory no. 11-01.

<https://hdoa.hawaii.gov/pi/files/2013/01/Fiorinia-phantasma-NPA.pdf>

Watson GW, Williams DJ, Miller DR (2015) The identity and distribution of *Fiorinia phantasma* (Cockerell & Robinson) (Hemiptera: Coccoomorpha: Diaspididae), with a new synonym. *Zootaxa* **4048**(2), 291-300.