

# First finding of *Sophonia orientalis* (Matsumura) in the Azores

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## Abstract

*Sophonia orientalis* (Matsumura) (Hemiptera; Cicadellidae) is native to South-East Asia and is a highly polyphagous pest, considered an invasive pest, that affects crops as well as endemic plants. This paper presents the first report of *S. orientalis* in the Azores (Portugal). The first individuals were found in 2018 in the botanic garden on Terceira Island and later in 2020 in banana orchards. In 2020, *S. orientalis* was found in Pico Island in mixed forests.

## Premier signalement de *Sophonia orientalis* (Matsumura) aux Açores

*Sophonia orientalis* (Matsumura) (Hemiptera ; Cicadellidae) est un organisme nuisible indigène à l'Asie du Sud-Est, très polyphage, à caractère envahissant, qui affecte les cultures ainsi que les plantes endémiques. Cet article présente le premier signalement de *S. orientalis* aux Açores (Portugal). Les premiers individus ont été détectés en 2018 dans le jardin botanique de l'île de Terceira, puis en 2020 dans des bananeraies. En 2020, l'organisme a été signalé sur l'île de Pico dans des forêts mixtes.

## Первое обнаружение *Sophonia orientalis* (Matsumura) на Азорских островах

*Sophonia orientalis* (Matsumura) (Hemiptera; Cicadellidae) - это аборигенный вид из Юго-Восточной Азии, который является очень многоядным вредным организмом и считается инвазивным видом. Он поражает сельскохозяйственные культуры, а также дикорастущие эндемичные растения. В статье представлено первое сообщение о присутствии *S. orientalis* на Азорских островах (Португалия). Первые особи были обнаружены в 2018 году в ботаническом саду на острове Терсейра, а затем в 2020 году в банановых садах. В 2020 году этот вредитель был обнаружен на острове Пико в смешанных лесах.

*Sophonia orientalis* (Matsumura) (Hemiptera; Cicadellidae) is a leafhopper native to South-East Asia. This leafhopper has been introduced in the Hawaiian Islands (US), Tahiti (French Polynesia) and in the mainland US (California, Texas, Louisiana, Alabama, Georgia and Florida) (Neto et al., 2021). In 2007, its presence was first recorded in the Macaronesian archipelagos (Aguin-Pombo et al., 2007) in Madeira (Portugal) and the Canary Islands (Spain) (CABI, 2021). In mainland Europe, *S. orientalis* was recently detected in Gibraltar

and Southern Spain (Wilson et al., 2011), as well as in Portugal (Neto et al., 2021).

The first individuals of *S. orientalis* were collected in 2018 in the botanic garden in Angra do Heroísmo on Terceira Island (38° 39' 27.792" N, 27° 13' 4.98" W). More recently, other individuals were captured in May 2020 in banana orchards located in Angra do Heroísmo in Terceira Island, Azores (Portugal) (38° 39' 42.0" N, 27° 12' 35.9" W) and on Pico Island in mixed forest comprising *Pittosporum undulatum* Vent. and *Erica azorica*



**FIGURE 1** Adult of *Sophonia orientalis* collected in Pico (photo: Elisa Tarantino- cE3c)

Hochst (38° 28' 22.152" N, 28° 30' 35.028" W) in July 2020 (Figure 1).

The specimens were identified morphologically according to Li and Chen (2005) and Aguin-Pombo et al. (2007). The adult is 4.2–5.5 mm long with the head as broad as the pronotum. The overall colour is yellow, and the body is depressed and marked with a longitudinal line, double only on the head and bordered with a bright red area on the forewings. Forewings have two brown false veins extended on costal margins with a dark spot near the posterior wing margin (Aguin-Pombo et al., 2007).

The damage produced on the leaves of the host plants is caused by a combination of feeding and oviposition behaviour of the pest. The former consists of chlorosis, vein browning, reduced stem length better known as hopper burn, while oviposition into the midveins can lead to vascular bundle damage (Aguin-Pombo et al., 2007) or total disruption of the xylem and phloem (Neto et al., 2021).

*Sophonia orientalis* is a very polyphagous species and in Hawaii the nymph can develop on over 300 plants (CABI, 2021). Many of these hosts are crops of economic importance such as banana, maize, citrus, mango, Annona and guava but it is also present in other plants, such as *Myrica faya*, which is used to create windbreak hedges to protect the main crops and also comprises a major component in the Macaronesia native forest (Aguin-Pombo et al., 2007).

Since *S. orientalis* has a preference for closed and wetter habitats (CABI, 2021), the Azorean climate

conditions, with minimal temperature fluctuation and very high humidity throughout the year, are suitable for its proliferation so the native forest would appear to be the most endangered habitat.

In conclusion, due to its very small size and its tendency to lay eggs in leaves, the spread and further introductions of this pest with imported plant material is very high. Due to the presence of hosts and a highly suitable climate it is considered that *S. orientalis* could represent an important pest in the Azorean agro-ecosystems.

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