

SHORT COMMUNICATION

First record of *Maconellicoccus hirsutus* (Green) (Hemiptera: Pseudococcidae) on *Albizia julibrissin* - Honeybee foraging on mealybug honeydew

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Summary In August 2024, the pink hibiscus mealybug, *Maconellicoccus hirsutus* (Green) (Hemiptera: Coccothorpha: Pseudococcidae), was found in heavy infestations on *Albizia julibrissin* Durazz. (Fabaceae) and *Grevillea robusta* A. Cunn. (Proteaceae) in Athens, Greece. This is the first global record of *A. julibrissin* and the first record on *G. robusta* in Greece, as hosts of *M. hirsutus*. All developmental stages: eggs, nymphs, and adult males and females, were present. Honeybees (*Apis mellifera* L.) were observed actively foraging on the abundant honeydew secreted by the mealybugs. Further research is necessary to assess the potential impact of this invasive pest on host plants in Greece, and the significance of its honeydew as an alternative food resource for honeybees.

Additional keywords: *Albizia julibrissin*, *Apis mellifera*, climate change, *Grevillea robusta*, honeydew, *Maconellicoccus hirsutus*

Maconellicoccus hirsutus (Green) (Hemiptera: Coccothorpha: Pseudococcidae) was first recorded in Greece on *Hibiscus rosa-sinensis* (Linnaeus) (Malvaceae) on the island of Rhodes in 2014. Subsequent records in 2016 included *Hibiscus* sp., *Ceratonias siliqua*, *Erythrina* sp. and *Bauhinia* sp. (Fabaceae) (Milonas and Partsinevelos, 2017).

The present study reports the first global record of the ornamental plant *Albizia julibrissin* Durazz. (Fabaceae) and the first Greek record of *Grevillea robusta* A. Cunn. (Proteaceae) as host plants for *M. hirsutus*. Both records were documented in Alimos, Attiki (37°55'36 N, 23°44'37 E) in August 2024 (Figs 1 and 2). The plants were heavily infested. Samples of the infested shoots were transferred to the laboratory for examination.

All developmental stages of the scale were recorded: eggs covered by waxy ovisac, nymphs and male and female adults. Female adults were collected and microscopic permanent slides were made according to the method of Kosztarab and Kozár (1988). The identification of the species *M. hirsutus* was made by Professor Mehmet Bora Kaydan (Biotechnology Development and Research Centre, Adana), Çukurova University, Turkey. The vouchers of the permanent slides are kept in the Biotechnology Development and Research Centre of Çukurova University and in the Laboratory of Agricultural Entomology and Zoology, Department of Agriculture, University of the Peloponnese.

The genus *Maconellicoccus* Ezzat (Hemiptera: Coccothorpha: Pseudococcidae) includes nine species. Only the species *M. hirsutus*, which is native to southern Asia, is recorded in Greece. *Maconellicoccus hirsutus* is a highly polyphagous species infesting plants of 258 Genera, belonging to 84 Families. It is distributed in 110 countries worldwide (García Morales *et al.*, 2016) while in Europe it is recorded in Greece and Cyprus

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Figure 1. Infestation of *Albizia julibrissin* by *Maconellicoccus hirsutus*.



Figure 2. Infestation of *Grevillea robusta* by *Maconellicoccus hirsutus*.

(Ülgentürk and Hocaali, 2019). Moreover, other records from the Mediterranean basin include the countries Algeria (EFSA PLH Panel, 2022), Egypt (Williams, 1986), Israel (Spodek *et al.*, 2018), Tunisia (Halima-Kamel *et al.*, 2015) and Turkey (EFSA, 2021).

The first global record of *M. hirsutus* on *A. julibrissin* and the first Greek record on *Grevillea robusta* expand the pest's known host range and geographic distribution. Georgopoulou *et al.* (2025) highlights the pest's wide host range and its ability to thrive in diverse climates; the climate change scenario SSP5-8.5 projects further range expansion of *M. hirsutus* into areas of southern Europe, including Spain, Italy, Greece, and the Mediterranean coastline, with increased climatic suitability for persistent populations. This aligns with our current findings, and suggests that urban and peri-urban landscapes, with their mix of ornamental and agricultural plants, could serve as critical zones for further establishment and spread. According to EFSA PLH Panel (2022), *M. hirsutus* meets the criteria that are within the remit of EFSA to assess for it to be regarded as a potential Union quarantine pest.

Al-Fwaeer *et al.* (2014) reported that *M. hirsutus* completes one generation in warm period of the year in Jordan. Regarding the host plants, damage and economic importance of *M. hirsutus*, Charlet (1997) referred that the mealybug invaded the US Virgin Islands, Puerto Rico, St. Kitts, Trinidad, Tobago, Grenada and several other Caribbean islands, where it was damaging coffee, cotton, soybean, citrus and some other crops.

According to the same study, the mealybug feeds on soft plant tissues and injects a toxic saliva that distorts leaves and buds, causing curling, twisting, and a bushy appearance at shoot tips. Infestations also lead to shortened internodes, and heavy honeydew excretion, which fosters black sooty mold and can stunt, particularly seedlings and weakened trees. The pest occurs on stems, leaves, buds, fruit, and even underground parts (e.g., roots, pods, and pegs in peanuts), reducing yields and compromising plant vigor. In cotton, it infests growing parts, producing bunchy growth and fewer, smaller bolls, while in grapevines, severely infested clusters may shrivel and drop (Williams, 1996).

Natural enemies of *M. hirsutus* include 72 species belonging to 22 Insect Families of parasitoids and predators (mainly Hymenoptera, Coleoptera, Neuroptera, Diptera, Lepidoptera, Hemiptera, Thysanoptera), the entomopathogenic fungi *Beauveria bassiana* and the nematode *Heterorhabditis amazonensis*. (García Morales *et al.*, 2016). The coccinellid predator *Cryptolaemus montrouzieri* Mulsant and the parasitoid wasp *Anagyrus kamali* Moursi are recommended for biological control of the mealybug (Etienne *et al.*, 1998).

A noteworthy observation on *A. julibrissin* and *G. robusta* was the presence of abundant honeydew secreted by *M. hirsutus*. This honeydew attracted honeybees, offering an alternative food source during periods of scarce floral resources (Fig. 3). In the insight of climatic crisis, the potential impact of the



Figure 3. Honeybees feeding on honeydew secretions of *Maconellicoccus hirsutus*.

pest on host crops in Greece should be investigated, as well as the role of the mealybug's honeydew in apiculture.

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ΣΥΝΤΟΜΗ ΑΝΑΚΟΙΝΩΣΗ

Πρώτη καταγραφή του ψευδόκοκκου *Maconellicoccus hirsutus* (Green) (Hemiptera: Coccomorpha: Pseudococcidae) στο καλλωπιστικό φυτό *Albizia julibrissin* - Διατροφή μελισσών στις μελιτώδεις εκκρίσεις

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Περίληψη Ο ψευδόκοκκος *Maconellicoccus hirsutus* (Green) (Hemiptera: Coccomorpha: Pseudococcidae) βρέθηκε τον Αύγουστο του 2024 σε μεγάλους πληθυσμούς στα καλλωπιστικά φυτά *Albizia julibrissin* και *Grevillea robusta* στην Αθήνα. Αυτή είναι η πρώτη παγκόσμια καταγραφή του *A. julibrissin* και η πρώτη καταγραφή του *G. robusta* στην Ελλάδα, ως ξενιστές του *M. hirsutus*. Κατά τις δειγματοληψίες, βρέθηκαν όλα τα στάδια ανάπτυξης του εντόμου: ωά, νύμφες και άρρενα και θήλεα ακμαία. Επί των αποικιών του εντόμου παρατηρήθηκε παρουσία μελισσών (*Apis mellifera* L.) που διατρέφονταν στις άφθονες μελιτώδεις εκκρίσεις του ψευδόκοκκου. Περαιτέρω έρευνα απαιτείται για την αξιολόγηση της πιθανής επίδρασης αυτού του χωροκατακτητικού εντόμου στα φυτά ξενιστές της χώρας μας και της σημασίας του μελιτώματός του ως εναλλακτικού πόρου τροφής για τις μέλισσες.

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