SHORT COMMUNICATION

Record of *Phenacoccus peruvianus* Granara de Willing and *Phenacoccus madeirensis* (Hemiptera: Pseudococcidae) on new host ornamental plants in Greece

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Summary Two invasive mealybug species, *Phenacoccus peruvianus* Granara de Willink and *Phenacoccus madeirensis* Green (Hemiptera: Pseudococcidae), have been recorded on new species of ornamental plants in different regions of Greece. *Phenacoccus peruvianus* was recorded in Athens on *Cestrum nocturnum* L. (Solanaceae) in September 2013. *Phenacoccus madeirensis* was found in Kalamata (Peloponnese) on *Aloysia citriodora* Paláu (Verbenaceae) in May 2014 and on *Osteospermum jucundum* (Philips) (Asteraceae) in July 2014. This is the first record of *O. jucundum* as host plant of *P. madeirensis*.

During the recent years, mealybugs (Hemiptera: Pseudococcidae) have been spreading in many countries, causing severe damage mainly on ornamental plants. Scale insects represent the second largest group of alien insects in Europe after aphids (DAISIE, 2008; Beltrà *et al.*, 2010). The mealybug scale insects are typical invasive species (Miller *et al.*, 2005) due to their small size and cryptic behaviour (Beltrà *et al.*, 2010). Their entrance to an area without natural enemies, facilitates their easy establishment, and increases the possibility of causing economically significant damage.

The literature review provided the occurrence of 6 species from the genus *Phenacoccus* in Greece, namely: *Phenacoccus bicerarius* Borchsenius (Kozár *et al.*, 1991), *P. hordei* (Lindeman) (Milonas and Kozár, 2008), *P. peruvianus* Granara de Willink, (Gkounti and Milonas, 2013), *P. interruptus* Green (Kozár, 1985), *P. madeirensis* Green (Jansen *et al.*, 2010; Papadopoulou and Chryssohoides, 2012) and *P. yerushalmi* Ben-Dov (Ben-Dov *et al.*, 2006).

In this study, the presence of *P. peruvianus* and *P. madeirensis* have been recorded in new locations on new host plant species, only a short time after their first appearance in Greece. The mealybugs were found during phytosanitary inspections on ornamental plants in public and private gardens in the towns of Kalamata (Peloponnese) and Athens.

The bougainvillea mealybug *Phenacoccus peruvianus* is native to Neotropical region (Peru, Argentina). In Europe, it was first reported in the region of Almeria, Spain (1999) on *Bougainvillea glabra* Choisy (Nyctaginaceae). Later it was found in Sicily, Italy (2002), south East England and Corsica (2005), Portugal (2006), Monaco (2008) and France (2008) on *Bougainvillea* sp., while in 2009 was first recorded on *Justicia suberecta* (Acanthaceae) and *Solanum vespertilio* Alion (Solanaceae) in the island of Majorca (Spain) (Beltrà *et al.*, 2010). Its fast spread throughout the Mediterranean basin is believed to be facilitated by the increase of world trade of ornamental plants (Beltrà *et al.*, 2010; Gkounti and Milonas, 2013). *Phenacoccus peruvianus* was first recorded in Greece (in the island of Paros) on *Bougainvillea* sp. in autumn of 2012 (Gkounti and Milonas, 2013).

During the present study, *P. peruvianus*

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was recorded in the suburb of Athens, Papagou (37°59'35.2"N, 23°48'31.8"E), where the mealybug was found on *Cestrum nocturnum* (Solanaceae) in September 2013 (Fig. 1). The identification of *P. peruvianus* was made by Dr M. Bora Kaydan (Çukurova University of Adana, Turkey).

Figure 1. *Phenacoccus peruvianus* on *Cestrum nocturnum* (Photo by G.J. Stathas).

The Madeira mealybug, *P. madeirensis*, is considered to have a New World origin. It was described by Green (1923) and its name was derived from Madeira Islands. In Europe, its first reports were from Western Mediterranean region, Sicily and later from France (Jansen *et al.*, 2010). Jansen *et al.* (2010) recorded Madeira mealybug in Crete on *Hibiscus rosa-sinensis* (Solanaceae) in 2010 and indicated that this mealybug has been spreading to wider territories in the Mediterranean region.

In this study, *P. madeirensis* was recorded in the town of Kalamata (37°02'17.0"N, 22°04'41.2"E) on *Aloysia citriodora* in May 2014 and at the same area on *Osteospermum jucundum* (Phillips) (Asteraceae) in July 2014 (Fig. 2, Fig. 3). The identification of the species was made by Professor Giuseppina Pellizzari (University of Padua, Italy). According to ScaleNet Database (Ben-Dov *et al.*, 2013), *O. jucundum* is a new host plant of *P. madeirensis*.

Although the above mentioned invasive mealybug species have already been recorded in Greece, it is wise to encourage the study of their distribution in other areas of

Figure 2. *Phenacoccus madeirensis* on *Aloysia citriodora* (Photo by G.J. Stathas).

Figure 3. *Phenacoccus madeirensis* on *Osteospermum jucundum* (Photo by G.J. Stathas).

the country. Invasive species can sometimes have a great impact on biodiversity, modify the habitat and cause extensive environmental and economic destruction. In recent years, several species of economically important mealybug pests (Pseudococcidae) have been introduced into different countries in the Mediterranean Region and other areas of the Palaearctic Region (Kaydan *et al.*, 2012).

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ΣΥΝΤΟΜΗ ΑΝΑΚΟΙΝΩΣΗ

Καταγραφή των *Phenacoccus peruvianus* Granara de Willing και *Phenacoccus madeirensis* (Hemiptera: Pseudococcidae) σε νέα καλλωπιστικά φυτά-ξενιστές στην Ελλάδα

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Περίληψη Καταγράφεται η παρουσία των επεκτατικών αλλόχθονων κοκκοειδών εντόμων *Phenacoccus peruvianus* Granara de Willink και *Phenacoccus madeirensis* Green (Hemiptera: Pseudococcidae) επί νέων ειδών καλλωπιστικών φυτών, σε νέες περιοχές της Ελλάδος, λίγα μόλις έτη μετά από την πρώτη καταγραφή τους στη χώρα μας. Το είδος *Phenacoccus peruvianus* βρέθηκε στην Αθήνα επί του καλλωπιστικού φυτού *Cestrum nocturnum* L. (Solanaceae) το Σεπτέμβριο του 2013. Το είδος *Phenacoccus madeirensis* βρέθηκε στην Καλαμάτα (Πελοπόννησος) επί του καλλωπιστικού φυτού *Aloysia citriodora* Paláu (Verbenaceae) το Μάιο του 2014 και επί του *Osteospermum jucundum* (Phillips) (Asteraceae) τον Ιούλιο του 2014. Το καλλωπιστικό φυτό *O. jucundum*, αναφέρεται για πρώτη φορά ως ξενιστής του *P. madeirensis*.

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