

The grapevine aphid *Aphis illinoisensis*: a good example of recent invasion and rapid colonization by aphids

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Aphis illinoisensis represents one of the most recent aphid invaders from the New World to the Mediterranean Region. This aphid, which is native to North America and is now widely distributed in Central and South America, was first found in Southern Turkey in 2002, and in 2005 it was also found in Crete (Greece). Thereafter it was recorded from Northern Cyprus, Israel, Tunisia, Algeria, Montenegro and Libya, and is now probably present throughout the Mediterranean. The present work provides data on the presence of this aphid in the Maltese islands, a group of low-lying islands situated in the central Mediterranean Basin.

One of the most recent alien aphids introduced from the Nearctic Region and established in the Palaearctic Region is the grapevine aphid, *Aphis illinoisensis* (Shimer, 1866) (Coeur d'acier *et al.*, 2010). The species is heteroecious holocyclic in North America, with *Viburnum prunifolium* as a primary host and several species of Vitaceae (*Ampelocissus*, *Cissus*, *Parthenocissus* and *Vitis*) as secondary hosts, and it is likely to be anholocyclic on vines in warmer climates and glasshouses in other parts of the world (Blackman & Eastop, 2000, 2006). In the New World, the species is considered to be a pest of grapevines, but so far records from the Palaearctic territories are citing this aphid as a minor pest (e.g. Barjadze & Ben-Dov, 2011). *Aphis illinoisensis* is a vector of watermelon mosaic virus (Webb *et al.*, 1994); there is no evidence of transmission of grapevine viruses by this aphid (Kuniyuki *et al.*, 1995). The parasitoids associated with this aphid in the Mediterranean Region were reviewed by Havelka *et al.* (2011).

Since its accidental introduction in Turkey in 2002 (Remaudière *et al.*, 2003), this species has been recorded practically throughout the Mediterranean Basin (Fig. 1). There are published records of *A. illinoisensis* from Greece (Tsitsipis *et al.*, 2005), Israel (Quirós *et al.*, 2009; Barjadze & Ben-Dov, 2011), Tunisia (Kamel-Ben Halima & Mdellel, 2010), Algeria (Laamari & Coeur d'acier, 2010), Montenegro (Petrović-Obradović *et al.*, 2010) and Libya (Havelka *et al.*, 2011).

The aphid fauna of the Maltese islands is poorly known. Mifsud *et al.* (2009) provided an overview of all aphid records from Malta and published a list of the 50 aphid species so far known from the territory. In a work related to aphids on crop plants, herbaceous and woody shrubs, Mifsud *et al.* (2011) recorded some 60 additional new records of aphids from the Maltese islands, which included *A. illinoisensis*. Due to the importance of this exotic aphid as a pest of grapevines, these records are being presented here for the first time. In 2009, *A. illinoisensis* was found on *Vitis vinifera* on mainland Malta as follows: Msida (university grounds), 2009-06-01, apterae attended by *Cre-*

matogaster scutellaris (Hymenoptera: Formicidae), collected by D. Mifsud; Qormi, 2009-06-25/2009-08-13/2009-09-28; apterae attended by *Tapinoma nigerrimum* (Hymenoptera: Formicidae), collected by E. Azzopardi; Rabat (Buskett area), 2009-09-30; apterae, collected by E. Azzopardi; Hal-Far, 2010-06-20; apterae and alatae, collected by D. Mifsud; Zejtun, 2010-07-13; apterae, collected by D. Mifsud.

Aphis illinoisensis was first noted in Malta in 2009, but the high level of infestations and extensive damage observed at that time indicate that the species was probably introduced earlier. In the Hal-Far area (in the far south of Malta), the species was observed in both private gardens and open fields, and high infestations of this aphid indicate that it is developing locally into a major pest of grapevine.

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Le puceron de la vigne *Aphis illinoisensis*: un bon exemple d'invasion récente et de rapide colonisation par des pucerons

Aphis illinoisensis représente un des pucerons envahissants les plus récents du Nouveau Monde vers la région méditerranéenne. Ce puceron, qui est originaire d'Amérique du Nord et est désormais largement répandu en Amérique centrale et du Sud, a été trouvé pour la première fois dans le sud de la Turquie en 2002 et également en 2005 en Crète (Grèce). Par la suite, il a été signalé dans le nord de Chypre, Israël, la Tunisie, l'Algérie, le Monténégro et la Libye et est désormais probablement présent dans l'ensemble de la région méditerranéenne. Cet article présente des données sur la présence de ce puceron dans les îles maltaises, un



Fig. 1 Distribution of *Aphis illinoisensis*: black, native range; red, regions of introduction and establishment in the Mediterranean.

groupe d'îles de faible altitude situées au milieu du bassin méditerranéen.

Тля виноградной лозы *Aphis illinoisensis*: хороший пример недавней инвазии и быстрой колонизации тлями

Aphis illinoisensis, представляет собой одну из самых новых инвазивных тлей, попавших из Нового мира в регион Средиземного моря. Эта тля, которая является аборигенной в Северной Америке и в настоящее время широко распространена в Центральной и Южной Америке, была впервые найдена в южной Турции в 2002 году, а в 2005 году она была также найдена и на острове Крит (Греция). Затем она была зарегистрирована на севере Кипра, в Израиле, Тунисе, Алжире, Черногории и Ливии и теперь, по-видимому, присутствует повсюду в Средиземноморском регионе. Данная работа представляет данные по присутствию этой тли также и на мальтийских островах, т.е. в группе низкоуровневых островов, расположенных в центральной части Средиземноморского бассейна.

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