

SCIENTIFIC NOTE

***Aphis illinoisensis* Shimer (Hemiptera: Aphididae)
a Recent Invasive Aphid Species in Egypt**

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(Received: November 20, 2012 and Accepted: December 10, 2012)

ABSTRACT

Apterous and alate viviparous females of the grapevine aphid species, *Aphis illinoisensis* Shimer (Hemiptera: Aphididae) were recorded for the first time in Egypt on grapes, *Vitis vinifera* L., at Sharkia and Dakhalia Governorates in 2012. Primary and hyperparasitoid species associated with the aphid species were reported.

Keywords: Grapevine aphid, *Aphis illinoisensis*, Parasitoids, Egypt.

Aphids (Hemiptera: Aphididae) are small insects, easily transferred to new countries and continents. A total of 102 invasive species of Aphididae have been introduced into Europe, represents 7% of the European aphid fauna (Coeur d'acier *et al.*, 2009). *Aphis illinoisensis* Shimer is one of such invasive species recorded recently in the 2000s in Southern Europe and in the North African countries.

Synonyms:

Aphis illinoisensis Shimer 1866: *Aphis ampelophila* Del Guercio 1913; *A. viticola* (Thomas); *Macrosiphum illinoisensis* (Shimer); *M. viticola* Thomas 1878; *Siphonophora viticola* Thomas.

Host plants:

Tabasco (Sanchez, 2000), *Carica papaya* (pawpaw); *Cissus sicyoides*; *Cucumis sativus* (cucumber); *Mangifera indica* (mango); *Viburnum* sp. (black haw); *Vitis tiliifolia* and *Vitis vinifera* (grape) (Draft IRA Report, 2003).

Distribution:

A. illinoisensis is native to North America and now widely distributed in Central and South America (Baker, 1917) and a new recorded species in Mexico (Sanchez, 2000). The aphid species was first reported outside of America in 2002 in Southern Turkey (Remaudiere *et al.*, 2003), 2005 in Greece (Tsitsipis *et al.*, 2005), 2004-2005 in Northern Cyprus (Kocadal and Ulusoy, 2006), 2007 in Israel (Barjadze and Ben-Dov, 2011), 2007 in Montenegro (Petrović-Obradović *et al.*, 2010), 2009 in Tunisia (Ben Halima Kamel and Mdellel, 2010), 2009 in Algeria (Laamari and Coeur d'acier, 2010) and 2010 in Libya (Havelka, *et al.*, 2011).

In 2012, through sampling of the grape aphids in some localities in Egypt; at Sharkia (10/5/2012) and Dakhalia (24/9/2012) Governorates, *A. illinoisensis* was found for the first time in Egypt. Specimens were identified by Dr. Aziza El-Gantiry, Plant Protection Research Institute, Agricultural Research Center, Giza, Egypt.

Biology:

A. illinoisensis prefers the leaves on young terminal shoots and was more abundant when there is noregular cutting of shoots. (Remaudiere *et al.*, 2003 and Tsitsipis *et al.*, 2005). Apterous and alatae aphids are dark brown to almost black and shiny, forming colonies on young leaves and shoots (Olivera *et al.*, 2010). In some cases, it was reported as a virus vector for water melon mosaic virus-2 (Webb *et al.*, 1994); other references sound adversely for transmission of the virus to grapes (Kuniuki *et al.*, 1995) in Brazil. The biology of this aphid species was studied by several authors; Petrović-Obradović *et al.*, 2010; Ben Halima Kamel and Mdellel, 2010 and Cocuzza and Barbagall, 2011.

Parasitoids:

Through the few samples found in Egypt in 2012, associated primary parasitoid species recorded were; *Aphidius colemani* Viereck, *Diaeretiella rapae* M'Intosh and *Aphelinus albipodus* Hayat and Fatima, and the hyperparasitoid species *Alloxysta* sp. Few literatures reported primary parasitoid species associated with *A. illinoisensis* such as; *Lysiphlebus* sp. in Colombia (Ramirez and Zuluaga, 1995), *A. matricariae* in Turkey (Barjadze *et al.*, 2011) as well in Cyprus, Turkey, Greece; *A. colemani* in Libya and *Lysiphlebus testaceipes* in Algeria (Havelka *et al.*, 2011). Havelka *et al.*, 2011 stated that the species, *A. colemani* and *L. testaceipes*

seem to be promising bio-control agents within the framework of an ecologically friendly management in the area.

Further studies to follow up *A. illinoisensis* geographical distribution and dispersal rate in the country are needed.

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