



Araştırma Makalesi/Research Article

Aphids (Hemiptera: Aphididae) on Ornamental Plants from Yalova Province, Turkey

Iskender Kuloğlu¹ Nihal Özder^{2*}

¹280 Sayılı Yalova Tarım Kredi Kooperatifi Suleymanbey Mahalle Mimar Sinan caddesi No:27\A YALOVA

²Namık Kemal University, Faculty of Agriculture, Department of Plant Protection, 59030 – TEKİRDAĞ

* Corresponding author: nozder@hotmail.com

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Abstract

This study was carried out to determine the aphid species feeding on ornamental plants in parks of Yalova (Centrum), Armutlu District and Çiftlikköy province from 2009 to 2010. As a result of this survey 21 aphid species belonging to 13 genera Aphididae family were determined. Of these species *Macrosiphum euphorbiae* Thomas 1878, *Aphis fabae* Scopoli 1763, *Aulacorthum solani* Kaltentbach, 1843, *Aphis gossypii* Glover, 1854 were found as the most common aphid species. Among the ornamental plants *Rosa* sp, *Yucca filamentosa*, *Begonia semperflorens* were found heavily infested by aphids.

Keywords: Yalova, Aphid, Aphididae, Ornamental plants

Yalova İlinde Bazı Süs Bitkilerinde Görülen Aphidoidea (Hemiptera) Türleri Üzerinde Araştırmalar

Öz

Yalova ilinde bazı süs bitkilerinde görülen Aphidoidea (Hemiptera) türlerini saptamak amacıyla, 2009-2010 yıllarında Yalova (merkez), Armutlu ve Çiftlikköy ilçelerini kapsayan bir çalışma yürütülmüştür. Bu çalışma sonunda Aphidoidea üst familyasında bağlı 13 cins ve bu cinslere bağlı 21 yaprak biti türü tespit edilmiştir. *Macrosiphum euphorbiae* Thomas 1878, *Aphis fabae* Scopoli 1763, *Aulacorthum solani* Kaltentbach, 1843, *Aphis gossypii* Glover 1854 türleri en yaygın yaprakbiti türleri olarak tespit edilmiştir. Araştırma sırasında yaprakbitlerinin özellikle *Rosa* sp, *Yucca filamentosa*, *Begonia semperflorens* bitkilerinde önemli ölçüde zarar yaptığı belirlenmiştir

Anahtar Sözcükler: Yalova, Yaprakbiti, Aphididae, Süs bitkisi

Introduction

Ornamental plants are generally used decorative plants in housing estates, urban and landscape vegetation. Floriculture which consists of the cultivation of ornamental plants used for cut flowers, flowering and non-flowering potted plants and of the production seeds, is an important part of the Turkish agriculture. Yalova province is one of the biggest producers of floriculture of Turkey and 10% of these are cut flowers (Anonymous, 2010; Doldur, 2008).

Aphid species are important pests among the insects which feed on ornamental plants in all over the world. These cause damage on the plants directly by sucking or indirectly as vectors of disease (Dixon, 1971a,b).

World aphid fauna now consists of about 4500 and 475 species are known from these species in Turkey (Akyürek et al., 2011; Barjadze et al., 2011, Eser et al., 2009; Görür et al., 2009; Hille Ris Lambers, 1947; Remaundiére et al., 2006; Toros et al., 2002). The aim of this study was to determine the aphid fauna on ornamental plants in the Yalova Province of Turkey.

Materials and Methods

This study was conducted to determine aphid species on the ornamental plants in the parks of Yalova Province between 2009 and 2010. Aphid species were collected from their host plants in the parks of Yalova Province of Turkey. Aphids were collected from their host plants with a fine brush and put into a tube which contained 70% alcohol. Collection and preparation of aphid samples were done according to the method of (Hille Ris Lambers, 1950). Species identified according to the (Bodenheimer and Swirski, 1957) and Blackman and Eastop (1984, 2000, 2006).



Results

List of Aphidoidea species on ornamental plants in Yalova region

Familya: Aphididae

Acyrtosiphon

Acyrtosiphon sp

Recorded on *Iris germanica*: Center, Sahil, 17.vi.2010; Center 9.v.2010; Center, 15.v.2010; Armutlu, Center, 30.v.2010

Aphis

Aphis craccivora Koch, 1854

Recorded on *Petunia hybrida*: Center, 30.v.2010; Armutlu, 11.vii.2010

Aphis fabae Scopoli, 1763

Recorded on *Anemon blanda*: Center, 30.v.2010; *Canna indica*: Center, 30.v.2010; Sahil, 4.vii.2010; *Jasminum fruticans*: Center, 06.vi.2010; *Nerium oleander* Center, 2.v.2010; Sahil, 6.vi.2010; *Petunia hybrida*: Center, 30.v.2010; Sahil, 11.vii.2010, *Tagetes patula*: Center, 11.vii.2010; *Viburnum opulus*: Center, 27.ii.2010; Center, 13.iii.2010; Armutlu, 20.iii.2010; Çiftlikköy, Sahil, 25.iv.2010; *Yucca filamentosa*: Center, viii.11.2009; Sahil, 21.xi.2009; Armutlu, 05.xii.2009; Center, 19.xii.2009; Center, 13.iii.2010, Center, 20.iii.2010, Sahil, 24.iv.2010.

Aphis gossypii Glover-1854

Recorded on *Antirrhinum majus*: Center, 30.v.2010; Center, 6.vi.2010; *Astromelias rojas*: Center, 4.viii.2010; *Begonia semperflorens*: Center, 17.iv.2010; Armutlu, 25.iv.2010; *Tagetes patula*: Center, 11.vii.2010; *Viburnum opulus*: Center, 1.v.2010

Aphis helianthi Monell, 1879

Recorded on *Yucca filamentosa*: Center, vii.11.2009; Center, 05.xii.2009; Sahil, 19.xii.2009; Center, 13.iii.2010; Sahil, 20.iii.2010, Sahil, 24.iv.2010.

Aphis nerii Boyer de Fonscolombe, 1841

Recorded on *Nerium oleander*: Center, 2.05.2010; Sahil, 6.06.2010.

Aphis sambuci Linnaeus, 1758

Recorded on *Dianthus barbatus*: Center, 2.v.2010, Sahil, 4.vii.2010.

Aulocorthum

Aulocorthum solani Kaltenbach, 1843

Recorded on *Begonia semperflorens*: Center, 17.iv.2010, Center, 25.iv.2010; *Canna indica*: Center, 30.v.2010, Center, 4.vii.2010; *Dianthus barbatus*: Center, 2.v.2010; Sahil, 4.vii.2010; *Nerium oleander*: Center, 2.v.2010; Sahil, 6.vi.2010; *Tulipa spp*: Center, 3.iv.2010; Sahil, 26.iv.2010; *Yucca filamentosa*: Center, 07.xi.2009; Sahil, 21.xi.2009; Center, 05.xii.2009; Center, 19.xii.2009; Center, 13.iii.2010; Center, 20.iii.2010; Sahil, 24.iv.2010.

Brachycaudus

Brachycaudus helichrysi Kaltenbach, 1843

Recorded on *Chrysanthemum leucanthemum*: Center, 20.vii.2010.

Chaetosiphon

Recorded on ; *Rosa spp.*, Center, 30.v.2010 Sahil, 9.v.2010

Macrosiphoniella

Macrosiphoniella tanacetaria Kaltenbach, 1843

Recorded on *Chrysanthemum leucanthemum*: Center, 20.vii.2010.

Macrosiphoniella sanborni Gillette 1908

Recorded on *Chrysanthemum leucanthemum*: Center, 20.vii.2010.

Macrosiphum euphorbiae Thomas, 1878

Recorded on *Begonia semperflorens*: Center, 17.iv.2010; Sahil, 25.iv.201; *Calendula arvensis*: Center, 2.v.2010; Sahil, 15.v.2010, *Iris germanica*: Center, 17.iv.2010; Center, 9.v.2010; Sahil, 15.iv.2010; *Rosa spp.*, Center, 10.x. 2009; Center, 17.x. 2009; Sahil, 7.xii. 2009; Sahil, 21.xii.2009, Center, 19.xii.2009, Armutlu, 13.iii.2010, Center, 27.iii.2010; Armutlu, 17.iv.2010; Center, 25.iv.2010, Center, 9.v.2010; Sahil, 4.vii.2010; *Salvia splendens*: Center, 11.vii.2010; *Tulipa spp.*, Center, 25 iv.2010; Sahil, 26.iv.2010.

Macrosiphum mordvilkoii Miyazaki, 1968



Recorded on *Lilium stargazer*: Center, 30.v.2010; *Rosa* spp., Center, 10.x.2010; Center, 2009; Sahil, 17.x.2009; Center, 7.xi. 2009; Center, 21.xi.2009; Center, 19.xii.2009, Center, 13.iii.2010, Center, 27.0iii.2010, Center, 17.iv.2010; Center, 25.iv.2010; Sahil, 9.iv.2010, Center, 4.vii.2010

Macrosiphum rosae Linnaeus, 1758

Recorded on *Rosa* spp.: Center, 10.x.2009; Center, 17.x.2009, Center, 7.xi.2009, Center, 21.xi.2009, Sahil, 19.xii.2009, Center, 13.iii.2010, Center, 27.iii.2010, Center, 17.iv.2010, Sahil, 25.iv.2010, Sahil, 9.v.2010, Armutlu, 4.vii.2010.

Metopolophium

Metopolophium dirhodum Walker, 1849

Recorded on *Rosa* spp., 10.x. 2009 17.x. 2009, 7.x. 2009, 21.xi.2009, 19.xii.2009, 13.iii.2010, 27.iii.2010, 17.iv.2010, 25.iv.2010, 9.05v.2010, 4.vii2010

Myzaphis

Myzaphis rosarum .Kaltenbach, 1843

Recorded on *Rosa* spp.: Center, iv.2010; Center, 26.iv.2010

Myzus

Myzus (Nectarosiphon) persicae Sulzer, 1776

Recorded on *Begonia semperflorens*: Center, 17.iv.2010, Center, 25.iv.2010, *Tulipa* spp.: Sahil, 25. iv.2010, Center, 26.iv.2010

Rhodobium

Rhodobium porosum Sanderson

Recorded on *Rosa hybrida*: Center, 5.viii.2010

Schizaphis

Schizaphis graminum, Rondani

Recorded on *Iris germanica*: Center, 17.iv.2010, Center, Sahil, 9.v.2010; Sahil; Center, 15.v.2010; Center, 30.v.2010.

Uroleucon

Uroleucon compositae Theobald.

Recorded on *Calendula arvensis*: Center, 2.v.2010, Center, 15.v.2010

Discussion

In this study, 21 aphid species belong to Aphididae family damaged on ornamental plants in Yalova Province of Turkey. Among these specie *Aphis fabae* Scopoli, 1763, *Aphis gossypii* Glover, 1854 , *Aulocorthum solani* Kaltenbach,1843, *Macrosiphum euphorbiae* Thomas, 1878, *Macrosiphum mordvilko* Miyazaki and *Macrosiphum rosae* Linnaeus, 1758 are the most common species. The Aphidoidea superfamily is predominantly a northern temperature group, richest in species in North America, Europe, and Central and East Asia (Blackman and Eastop, 2000). They are the most important groups of pest insect. Studies conducted so far showed that Turkey aphid fauna consist of more than 532 species (Akyürek et al., 2010; Akyürek et al.; 2011; Kaygın et al., 2008; Kaygın et al., 2010; Şenol et al., 2015; Kök et al., 2016). Despite that there are general consensuses that due to geographical, agricultural, floristic and climatic variability and richness of Turkey, this number does not reflect sufficiently Turkish aphid fauna. Recently, a number of studies have been reported new aphid species (Akyürek et al., 2010; Barjadze et al., 2011; Görür et al., 2009) , indicating that such studies are, important for the incremental documentation nof the Turkish aphid fauna. To more accurately determine the true number of aphid species in Turkey, systematic studies should be conducted across all regions.

Conclusion

Among the ornamental plants *Rosa sp*, *Yucca filamentosa*, *Begonia semperflorens* were found heavily infested by aphids. *Macrosiphum mordvilko* Miyazaki, *Uroleucon compositae* (Theobald), *Rhodobium porosum* Sanderson were determined as new records for Yalova province aphid fauna in Turkey

Notes: This study is a part of first author's Master Science Thesis.



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