



Ekoloji  
15, 58, 1-6  
2006

# A Survey of Aphididae (Homoptera) on Wild Plants in Ankara, Turkey

Işıl ÖZDEMİR

Plant Protection Central Research Institute, 06172 Yenimahalle-ANKARA  
Seval TOROS, Ahmet Neşet KILINÇER, Mehmet Oktay GÜRKAN  
Ankara University, Faculty of Agriculture, Department of Plant Protection,  
06110 Dışkapı- ANKARA

## Abstract

In this study, the superfamily Aphidoidea (Homoptera) on wild plants was investigated in Ankara province during 2000-2004. Totally 67 species were determined belonging to 5 subfamily, 37 genus, 20 subgenus. 1 genus was found to be new record for Turkish aphid fauna.

**Keywords:** *Ankara, Aphididae, survey, Turkey, wild plant.*

## Ankara İlinde Otsu Bitkilerde Aphidoidea Türlerinin Surveyi

### Özet

Ankara ilinde 2000-2004 yılları arasında yürütülen bu çalışmada Aphidoidea (Homoptera) üst familyasından, 5 alt familyaya bağlı, 37 cins, 20 alt cinsine bağlı toplam 67 tür yabancı otsu bitkiler üzerinden tespit edilmiş olup, kesin tanıları yapılmıştır. Bir cins Türkiye yaprakbiti faunası için yeni kayıt niteliğindedir.

**Anahtar Kelimeler:** *Ankara, Aphididae, survey, Türkiye, yabancı bitki.*

## INTRODUCTION

Mediterranean aphids were identified by Bodenheimer and Swirski (1957). After these studies, some other researchers have made collection of aphids from different regions, hosts and listed about 350 aphid species found in Turkey (Tuatay and Remaudiere 1964, Çanakçıoğlu 1975, Düzgüneş et al. 1982, Toros et. al. 2002, Görür 2004).

Aphids are not only parasitic on plants but also they suck plants of sap and usually live in colonies. Their life cycle is quite characteristic of a type known as heterogamy or cyclic reproduction (Bodenheimer and Swirski 1957). Their life history is also very characteristic but varies greatly with the different species. Most species are very restricted as to host plants. Others accept related plants and a relatively small number have a primary or winter host, a perennial, usually woody plant, and done or more secondary or summer host, usually annuals or wild plants (Palmer 1952).

The economic importance of aphids is a matter of major concern. Their attacks on plants cause serious damage by robbing the plant of sap, toxic action of their salivary secretions, thus causing of growth-stunting, deformation on leaves, stems or roots and acting as a vector of viruses which cause many diseases of plants.

A few investigations have been conducted with aphid on wild plant in Turkey. The aim of this study

was to determine aphid and its wild plants in Ankara Province of Turkey.

## MATERIAL AND METHODS

Aphids were collected in the field from their host plant with a small soft brush and put in to a tube which contained 70 percent alcohol. The preserving techniques mainly based on the method of Hille Ris Lambers (1950). The aphids were systematically classified from the catalog of Remaudière and Remaudière (1997). Host plants were identified according to Davis (1965-1985) and Davis et al. (1988) by Ayşegül Yıldırım (Plant Protection Central Research Institute, Head of Department).

Slides of the species have been deposited in the Department of Taxonomy and Plant Protection Museum, Plant Protection Central Research Institute, Ministry of Agriculture, Ankara, Turkey.

## RESULTS

A list of the species is presented below together with their host plant in Ankara province (Table 1).

As a result, it has been revealed that the variety of aphid fauna in this region depends on the rich wild plant flora. Most of the aphids were found on young leaves generally causing the rolling up or wither. The interaction listed in this study represents a great addition to the knowledge of the species of aphids that attack herbaceous plants. Besides, the high host specificity observed among the major aphid species that occur on wild plants facilitates both the identification of these aphids when collected on

their hosts and, consequently, their control.

#### ACKNOWLEDGMENTS

We would like to thank Dr. Georges REMAUDIÈRE (INRA-Fransa) for the aphid identification and Dr. Ayşegül YILDIRIM, Ministry

of Agriculture, Plant Protection Central Research Institute for plant identifications. This work was supported by the Ministry of Agriculture.

**Table 1.** Aphid-host plant list.

Species	Host Plants
<i>Acyrtosiphon euphorbiae</i> Börner	<i>Euphorbia</i> sp.
<i>Acyrtosiphon lactucae</i> (Passerini)	<i>Lactuca serriola</i> L.
<i>Anoecia</i> Koch	<i>Aegilops</i> sp. <i>Aegilops triuncialis</i> L. <i>Hordeum bulbosum</i> L.
<i>Anuraphis subterranea</i> (Walker)	<i>Heradium</i> sp. <i>Pastinaca sativa</i> L.
<i>Aphis affinis</i> del Guercio	<i>Mentha</i> sp.
<i>Aphis chloris</i> Koch	<i>Hypericum heterophyllum</i> Vent.
<i>Aphis craccivora</i> Koch	<i>Alhagi pseudoalhagi</i> (Bieb.) Desv. <i>Bromus sterilis</i> L. <i>Capsella bursa pastoris</i> (L.) Medik. <i>Cichorium intybus</i> L. <i>Crepis foetida</i> L. <i>Dipsacus laciniatus</i> L. <i>Euphorbia</i> sp. <i>Glychiriza</i> sp. <i>Malva</i> sp. <i>Sanguisorba minor</i> Scop. <i>Tripleurospermum decipiens</i> (Fisch. & C. A. Mey) <i>Urtica urens</i> L. <i>Verbascum</i> sp. <i>Vicia</i> sp.
<i>Aphis euphorbiae</i> Kaltenbach	<i>Euphorbia myrsinites</i> L.
<i>Aphis fabae</i> Scopoli	<i>Anchusa azurea</i> Miller <i>Anthemis</i> sp. <i>Atriplex nitens</i> Schkuhr <i>Carduus pycnocephalus</i> L. <i>Centaurea iberica</i> Trevir ex Spren. <i>Centranthus longiflorus</i> Steven <i>Chenopodium album</i> L. <i>Chenopodium murale</i> L. <i>Cichorium intybus</i> L. <i>Cirsium arvense</i> (L.) Scop. <i>Echinops</i> sp. <i>Galium verum</i> L. <i>Papaver rhoeas</i> L. <i>Polygonum</i> sp. <i>Rumex</i> sp. <i>Salvia</i> sp.
<i>Aphis fabae</i> ssp. <i>circiicanthoides</i> Scopoli	<i>Cichorium intybus</i> L. <i>Cirsium arvense</i> (L.) Scop.
<i>Aphis fabae</i> ssp. <i>solanella</i> Theobald	<i>Solanum nigrum</i> L.
<i>Aphis gossypii</i> Glover	Unknown
<i>Aphis intybiae</i> Koch	<i>Cichorium intybus</i> L.
<i>Aphis nasturtii</i> Kaltenbach	<i>Polygonum</i> sp.
<i>Aphis polygonata</i> (Nevsky)	* <i>Chondrilla juncea</i> L. <i>Polygonum cognatum</i> Meissn.
<i>Aphis numicis</i> Linnaeus	<i>Rumex</i> sp.
<i>Aphis salviae</i> Walker	<i>Salvia sclerae</i> L.
<i>Aphis tirucallis</i> Hille Ris Lambers	<i>Euphorbia</i> sp.
<i>Aphis umbrella</i> (Börner)	<i>Bifora radians</i> Bieb. <i>Malva neglecta</i> Wallr.
<i>Aphis urticata</i> Gmelin	<i>Urtica urens</i> L.
<i>Aphis vallei</i> Hille Ris Lambers&Stroyan	<i>Euphorbia</i> sp.
<i>Aphis verbasci</i> Schrank	<i>Verbascum</i> sp.
<i>Aphis (Protaphis) terricola</i> Rondani	<i>Centaurea iberica</i> Trevir ex Spren.

Table 1. Continued.

<i>Brachycaudus (Acaudus) cardui</i> (Linnaeus)	<i>Anchusa leptophylla</i> Roemer ve Sc. <i>Carduus pycnocephalus</i> L. <i>Cirsium arvense</i> (L.) Scop. <i>Cynoglossum creticum</i> Miller <i>Echinops</i> sp. <i>Isatis glauca</i> Aucher ex Boiss. <i>Onopordium</i> sp. * <i>Sisymbrium altissimum</i> L. <i>Sonchus asper</i> (L.) Hill.
<i>Brachycaudus helichrysi</i> (Kaltenbach)	<i>Onopordium</i> sp.
<i>Brachycaudus (Appelia) tragopogonis</i> (Kaltenbach)	<i>Galium</i> sp. <i>Tragopogon</i> sp.
<i>Brevicoryne brassicae</i> (Linnaeus)	<i>Diplotaxis tenuifolia</i> (L.) DC <i>Isatis glauca</i> Aucher ex Boiss. <i>Sinapis arvensis</i> L. * <i>Sisymbrium altissimum</i> L.
<i>Capitophorus elaeagni</i> (del Guercio)	<i>Cirsium arvense</i> (L.) Scop.
<i>Capitophorus hippophaes</i> (Walker)	<i>Polygonum lapathifolium</i> L.
<i>Capitophorus similis</i> van der Goot	<i>Tussilago farfara</i> L.
<i>Cavariella theobaldi</i> (Gillette & Bragg)	<i>Daucus</i> sp.
* <i>Cryptaphis</i> sp.	<i>Eryngium campestre</i> L.
<i>Dysaphis crataegi</i> (Kaltenbach)	<i>Daucus carota</i> L. <i>Eryngium campestre</i> L.
<i>Dysaphis foeniculus</i> (Theobald)	<i>Eryngium campestre</i> L.
<i>Eucarazzia elegans</i> Ferrari	<i>Mentha</i> sp.
<i>Forda marginata</i> Koch	<i>Festuca</i> sp. <i>Hordeum murinum</i> L.
<i>Geocia setulosa</i> (Passerini)	<i>Aegilops</i> sp.
<i>Geocia utricularia</i> (Passerini)	<i>Aegilops</i> sp.
<i>Hayhurstia atriplicis</i> (Linnaeus)	<i>Atriplex laevis</i> C.A. Meyer <i>Atriplex nitens</i> Schkuhr <i>Chenopodium album</i> L. <i>Chenopodium murale</i> L.
<i>Hyadaphis coriandri</i> (Das)	<i>Amaranthus</i> sp. <i>Bifora radians</i> Bieb. <i>Diplotaxis tenuifolia</i> (L.) DC <i>Echinophora tenuifolia</i> L.
<i>Hyadaphis foeniculi</i> (Passerini)	<i>Chenopodium album</i> L. <i>Pastinaca sativa</i> L.
<i>Hyalopterus pruni</i> (Geoffroy)	<i>Phragmites australis</i> (Cav) Trin.ex.Steudel <i>Phragmites communis</i> Trin.
<i>Hyperomyzus lactucae</i> (Linnaeus)	<i>Crepis</i> sp. <i>Lactuca serriola</i> L. <i>Sonchus asper</i> (L.) Hill. <i>Sonchus olareceus</i> L.
<i>Lipaphis erysimi</i> (Kaltenbach)	<i>Hirsfeldia incana</i> (L.) Lagrèze–Fossat * <i>Sisymbrium altissimum</i> L.
<i>Macrosiphum euphorbiae</i> (Thomas)	<i>Euphorbia</i> sp.
<i>Microlophium carnosum</i> (Buckton)	<i>Urtica urens</i> L.
<i>Myzus (Nectarosiphon) persicae</i> (Sulzer)	<i>Capsella bursa pastoris</i> (L.) Medik. <i>Cardaria draba</i> (L.) Desv. <i>Cirsium arvense</i> (L.) Scop. <i>Convolvulus</i> sp. <i>Malva neglecta</i> Wallr. <i>Portulago oleraceae</i> L. <i>Sisymbrium</i> sp. <i>Veronica</i> sp.
<i>Nasanovia ribisnigri</i> (Mosley)	<i>Crepis pulchra</i> L.
<i>Ovatus mentharius</i> (van der Goot)	<i>Mentha</i> sp.
<i>Paczoskia major</i> Börner	<i>Echinops ritro</i> L.
<i>Paradetus</i> von Heyden	<i>Aegilops</i> sp.
<i>Pemphigus immunis</i> Buckton	<i>Euphorbia</i> sp.

**Table 1.** Continued.

<i>Protrama radialis</i> (Kaltenbach)	<i>Carduus pycnocephalus</i> L. <i>Cirsium arvense</i> (L.) Scop.
<i>Protrama</i> Baker	<i>Chondrilla</i> sp.
<i>Rectinasus buxtoni</i> Theobald	<i>Lactuca</i> sp. <i>Xanthium strumarium</i> L.
<i>Rhopalosiphum maidis</i> (Fitch)	<i>Veronica</i> sp.
<i>Rhopalosiphum padi</i> (Linnaeus)	<i>Scrophularia rimarum</i> Bornm.
<i>Sipha</i> ( <i>Rungia</i> ) <i>maidis</i> Passerini	<i>Hordeum</i> sp.
<i>Sitobion avenae</i> (Fabricius)	<i>Bromus sterilis</i> L.
<i>Smythurodes betae</i> Westwood	<i>Orbanche</i> sp.
<i>Staegeiriella necopinata</i> (Börner)	<i>Galium verum</i> L.
<i>Tetraneura ulmi</i> (Linnaeus)	<i>Cynodon dactylon</i> (L.) <i>Dactylis glomerata</i> L. <i>Seteria verticillata</i> (L.) P.Beauv.
<i>Uroleucon chondrillae</i> (Nevsky)	<i>Chondrilla juncea</i> L.
<i>Uroleucon cichorii</i> (Koch)	<i>Cichorium intybus</i> L.
<i>Uroleucon sonchi</i> (Linnaeus)	<i>Carduus pycnocephalus</i> L. <i>Dipsacus</i> sp. <i>Sonchus asper</i> (L.) Hill. <i>Sonchus olareceus</i> L.
<i>Uroleucon</i> ( <i>Uromelan</i> ) <i>aeneum</i> Hille Ris Lambers	<i>Onopordium</i> sp.
<i>Uroleucon</i> ( <i>Uromelan</i> ) <i>jaceae</i> (Linnaeus)	<i>Acroptilon repens</i> (L.) De Candolle
<i>Uroleucon</i> ( <i>Uromelan</i> ) <i>jaceae</i> ssp. <i>aeneum</i> (Hille Ris Lambers)	<i>Carduus pycnocephalus</i> L.

**REFERENCES**

- Bodenheimer FS, Swirski E (1957) The Aphidoidea of the Middle East. The Weizmann Science Press of Israel, Jerusalem.
- Çanakçıoğlu H (1975) The Aphidoidea of Turkey. İstanbul Üniv. Orman Fak. Yayınları, Cilt: XXII, İstanbul Üniv. Yayın No: 1751, İstanbul.
- Davis PH (1965-1985) Flora of Turkey and the East Aegean Islands. Vol. 1-9, Edinburgh Univ. Press, Edinburgh.
- Davis PH, Mill R, Tan K (1988) Flora of Turkey and the East Aegean Islands. Vol. 10, Edinburgh Univ. Press, Edinburgh.
- Düzgüneş Z, Toros S, Kılınçer N, Kovancı B (1982) The Parasites and the Predators of Aphidoidea in Ankara. Turkish Ministry of Agriculture, Ankara.
- Görür G (2004) Aphid (Homoptera: Aphididae) species on pome fruit trees in Niğde Province of Turkey. J. Turk Entomol. 28, 1, 21-26.
- Hille Ris Lambers D (1950) On Mounting Aphids and other Softskinned Insects. Entomologische Berichten XIII, 55-58.
- Palmer MA (1952) Aphids of the Rocky Mountain Region. The Thomas Say Found 5, Denver, Colorado.
- Remaudière G, Remaudière M (1997) Catalogue des Aphididae du Monde (Of the World's Aphididae) Homoptera, Aphidoidea. Preface Par V.F. Eastop, INRA Editions, Paris.
- Toros S, Uygun N, Ulusoy R, Satar S, Özdemir I (2002) Doğu Akdeniz Bölgesi Aphidoidea Türleri. T.C. Tarım ve Köyişleri Bakanlığı, Tarımsal Araştırmalar Genel Müdürlüğü, Ankara.
- Tuatay N, Remaudière G (1964) Première Contribution au Catalogue des Aphididae (Hom.) de la Turquie. Rev. Path. Vegveale et D'entomologie Agricole de France 43, 4, 243-278.