

Aphid (Homoptera: Aphididae) species of the Central Aksaray

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Received : 26 May 2006

Accepted : 4 July 2006

Abstract

This study was based on the collection and determination of the aphid species of the Central Aksaray. A total 18 species were recorded in the family Aphididae. All of the identified species were new records for the study area as any recorded study was carried out so far. Results of the presented study show the importance of such local studies in determination of the Turkish aphid fauna.

Key words: Turkish aphid fauna, Aksaray.

INTRODUCTION

Aphid species are an economically important group of insects in Turkey as in all over the world as disease vectors and as direct plant sucking pests. Although very efficient and highly productive systems for producing crops have been developed, pests still cause serious problems. Some aphid species that occur in Turkey were classified as serious pests. For example, the black citrus aphid is a very serious pest in citrus groves in Turkey. Despite using the best pest control technology available in the United States, pest-caused losses of yield was estimated to average about 30% annually. However, in the developing countries to which Turkey belongs, pest-caused losses are even greater, averaging 50% or more [1]. Aphids found in Turkey therefore have important economic implications.

The known world fauna of aphids consist of more than 4400 species [2, 3, 4]. Çanakçıoğlu [5] summarized the studies and listed about 260 species for Turkish aphid fauna. Tuatay [6,7] summarized the studies were carried on aphids from 1965 to 1972. She recorded about 30 new species for Turkey. In recent studies, seven new species determined for the Turkish aphid fauna from Niğde province [8, 9]. Toros *et al.* [10] determined seven new species for Turkish aphid fauna from the East Mediterranean region. Aslan & Uygun [11] identified four new records for the Turkish aphid fauna from the Kahramanmaraş province. Özdemir *et al.* [12] recorded 11 species new for the Turkish aphid fauna and 1 species for the world aphid fauna. Recent studies carried out showed that Turkish aphid fauna is going to has more species if the researches spread out all regions of the Turkey. In this context, the goal of the presented study was to determine aphid species of the Central Aksaray

MATERIAL and METHODS

In this study, aphid samples were collected from the cultured plants (crops), ornamental plants and wild plants from the Central Aksaray.

Collection and preparation of samples were processed according to the principals of the Hille Ris Lambers [13] and Bodenheimer & Swirski [14]. Species were identified according to Bodenheimer & Swirski [14], Tuatay & Remaudiere [15], Blackman & Eastop [2, 3] and Çanakçıoğlu [5]. Systematically knowledge, host plants and synonyms of determined species were taken from Blackman & Eastop [2, 3] and Remaudiere & Remaudiere [4]. The taxonomic statuses of the determined species were checked according

to the recent update of Fauna European [<http://www.fauaetur.org/>]. Voucher specimens were kept at the Biology Department of Niğde University.

RESULTS

As a result of the study was carried out from 2004 to 2005, 18 species were determined from the study area. Species were listed in alphabetically.

Aphis craccivora Koch 1854 (Aphidinae: Aphidini)

Distribution: Originated from Palaearctic warm temperate region but now almost worldwide. In Turkey, it was recorded from Bursa, Bolu (Gerede), İstanbul, Burdur, Artvin, Niğde and Ankara [7, 9, 10, 14, 15, 16].

Material examined: Collected on *Acacia* spp. on 29/07/2004.

Aphis fabae Scopoli 1763 (Aphidinae: Aphidini)

Distribution: Widespread around the world except the warmest part of the tropics and Middle East [3]. Recorded almost all parts of the Turkey [5, 7, 9, 10, 11, 14, 15].

Material examined: Found on *Hibiscus esculentus* and *Cucumis sativus* on 30/06/2004 and 29/07/2004 respectively.

Aphis frangulae Kaltenbach 1845 (Aphidinae: Aphidini)

Distribution: Common in the Central Europe (3). It has been recorded from Kırklareli, Diyarbakır, Adana, Kahramanmaraş and Niğde in Turkey [7, 9, 10, 11, 17].

Material examined: Sampled on *Solanum tuberosum* on 29/07/2004.

Aphis gossypii Glover 1877 (Aphidinae: Aphidini)

Distribution: Originated from Palaearctic region but now distributed worldwide, especially in greenhouses. In Turkey, it was recorded from Aegean region, Iğdır, Mersin, Antalya (Kaş), Bolu (Gerede), Niğde, Kahramanmaraş and Eastern Mediterranean region [9, 10, 11, 14, 16].

Material examined: Found on *Cucurbita* spp. and *Hibiscus* spp. on 01/09/2004.

Aphis nasturtii Kaltenbach 1843 (Aphidinae: Aphidini)

Distribution: It is widespread throughout Europe, the Middle East, northern India, Pakistan, Japan, North America

and Chile [3]. Recorded from the Isparta, İzmir, Muğla, Çankırı, Bolu, Konya and Erzurum [7, 15, 18].

Material examined: Sampled on *Solanum tuberosum* on 25/07/2004.

Brachycaudus helichrysi (Kaltenbach 1843) (Aphidinae: Macrosiphini)

Distribution: Common around the world [3]. It has been recorded from Ankara, Adıyaman, Kahramanmaraş, Mardin, Siirt, İstanbul, Niğde in Turkey [9, 10, 11, 15, 17, 19, 20].

Material examined: Collected on *Euphorbia* spp. on 29/06/2004.

Brevicoryne brassicae (Linnaeus 1758) (Aphidinae: Macrosiphini)

Distribution: It is widespread throughout all the temperate and warm parts of the world [3]. It has been recorded from a lot of places such as Adana, Ankara, Amasya, Ordu, Samsun, Sinop, Urfa, İzmir, Van, Diyarbakır, Hatay, Mersin, Kahramanmaraş in Turkey [9, 10, 11, 18, 21, 22].

Material examined: Recorded on *Brassica oleracea* on 01/09/2004.

Dysaphis devectora (Walker 1849) (Aphidinae: Macrosiphini)

Distribution: Widespread in Europe [3]. Recorded from Malatya, Ankara, Kahramanmaraş, Diyarbakır, İçel, Hatay, Niğde and Mediterranean region in Turkey [10, 11, 15, 16, 17].

Material examined: Collected on *Malus* spp. on 29/07/2004

Hyalopterus amygdali (E. Blanchard 1840) (Aphidinae: Aphidini)

Distribution: It is widespread around the world. It has been recorded from Ankara, Kahramanmaraş, Siirt, East Mediterranean Region, Şanlıurfa, Diyarbakır and Niğde in Turkey [9, 11, 17, 20, 21].

Material examined: Recorded on both *Persica vulgaris* and *Syperus* sp. on 30/06/2004.

Hyalopterus pruni (Geoffrey 1762) (Aphidinae: Aphidini)

Distribution: It is a cosmopolitan species [3]. Recorded from Ankara, Gaziantep, Antalya, Diyarbakır, Hatay, İçel, Kahramanmaraş, İzmir and Niğde in Turkey [5, 9, 11, 14, 17, 21].

Material examined: Sampled on *Armenica vulgaris* on 30/06/2004.

Macrosiphoniella sanborni (Gillette 1908) (Aphidinae: Macrosiphini)

Distribution: It is originated from Eastern Asia but now widespread around the world [3]. Recorded from Ankara, Gaziantep, Niğde and some unmentioned locations [5, 9, 14, 23].

Material examined: Recorded on *Chrysanthemum leucanthemum* on the 28/06/2004.

Macrosiphum euphorbiae (Thomas 1878) (Aphidinae: Macrosiphini)

Distribution: It is originated from the North America but now widespread around the world [3]. It has been recorded from İstanbul, Ankara, İzmir, Erzurum, Amasya,

Sakarya, Adana, Hatay and Niğde in Turkey [5, 9, 10, 15, 18].

Material examined: Collected on various *Rosa* spp. on 29/07/2004

Myzus persicae (Sulzer 1776) (Aphidinae: Macrosiphini)

Distribution: It was more likely to originated from Asia but now widespread in all part of the world [3, 24]. It has been recorded almost all part of the Turkey [5, 6, 9, 10, 11, 17, 18].

Material examined: Sampled on *Zea mays* on 01/09/2004.

Pemphigus vesicarius Passerini 1861 (Pemphiginae: Pemphigini)

Distribution: It is widespread in southern Europe, southwest and Central Asia [2]. It has been recorded from Ankara, Denizli, Eskişehir, Isparta and Niğde in Turkey [5, 14, 25].

Material examined: Found on *Pinus nigra* on 30/06/2004.

Pterochloroides persicae (Cholodkovsky 1899) (Lachninae: Lachnini)

Distribution: Distributed throughout the Mediterranean area, in the Middle East, South-West Asia, and recently introduced to North America and New Zealand [2,3]. Recorded from Ankara, Adana, Hatay, İçel, Kahramanmaraş and Niğde in Turkey [10, 11, 14, 16].

Material examined: Collected on *Prunus armenica* on 25/09/2004.

Pterocomma populeum (Kaltenbach 1843) (Aphidinae: Pterocommatini)

Distribution: It is widespread in Europe, North Africa, southwest Asia and North America, South America [2]. It has been recorded from Ankara and some other parts of the Turkey [14].

Material examined: Collected on *Populus* sp. on 30/06/2004.

Rhopalosiphum maidis (Fitch 1856) (Aphidinae: Aphidini)

Distribution: It was originated from Asia, but now it is widespread around the world except in the very cold area [3]. It has been recorded from Bolu, Adana, Diyarbakır, Hatay, Kahramanmaraş, İçel and Niğde in Turkey [5, 9, 11, 17, 19].

Material examined: Collected on *Zea mays* on 28/06/2004.

Smynthurodes betae Westwood 1849 (Eriosomatinae: Fordini)

Distribution: It is almost worldwide [3]. It has been recorded for the first time on *Gossypium* sp. in Turkey [26].

Material examined: Sampled on *Cucurbita pepo* on 25/06/2004.

CONCLUSION

It is the first time a scientific study was carried out in Central Aksaray dealing with the aphid species. Aphid infestation yield to more than 30 % decrease in agricultural production in almost all part of the world. The presented results showed that although an important part of the popu-

lation work in agricultural production, there was no detailed study about pests of the crops. Organization of the similar local studies is going to play an important role in applied entomological studies and may add more species to Turkish aphid fauna. Recently Özdemir *et al.* [12] and Uysal *et al.* [27] described new species. Their findings and results of the presented study indicated that how these kinds of local studies are important for the determination of Turkish aphid fauna.

ACKNOWLEDGEMENT: We thank to Mustafa IŞIK for his technical support.

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