

Aphid (Homoptera: Aphididae) species on pome fruit trees in Niğde Province of Turkey

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Summary

As a result of the study carried out between 1999 and 2001, 15 aphid species were determined on pome fruit trees in Niğde province of Turkey. Among those *Schizaphis pyri* and *Pyrolachnus pyri* are new records for the Turkish aphid fauna.

Key words: Aphid, Niğde, pome fruit trees, Aphididae

Anahtar sözcükler: Afit, Niğde, yumuşak çekirdekli meyve ağaçları, Aphididae

Introduction

The known world fauna of aphids consist of more than 4400 species (Blackman & Eastop, 1994, 2000; Dixon, 1998). There are some studies were carried out by some researchers before 1950's on Turkish aphid fauna but much more studies were organized later. Çanakçıoğlu (1975) summarized the studies and listed about 260 species for Turkish aphid fauna. Tuatay (1991, 1993) summarized the studies were carried on aphids from 1965 to 1972 and recorded about 30 new species for Turkey. Elmalı & Toros (1996) recorded 13 species on wheat in Konya. Three new species were recently determined for the Turkish aphid fauna from Niğde province (Görür, 2002). Toros et al. (2002) determined 7 new species for Turkish aphid fauna from the East Mediterranean region. Aslan (2002) identified 68 species from Kahramanmaraş province and mentioned many of them as a new record for the study area. Recently, Toros et al. (2003) recorded 3 species new for Turkish aphid fauna.

Turkey is one of the largest agricultural country in the world and produce many kind of fruit trees. Pome fruits have important percent in fruit production. In our

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research area, pome fruits is being reared and they are economically important for the farmers. In recent years it has been shown that aphid has been causing serious damage to these fruits, therefore this study focused on the determination of aphids feed on pome fruits. It was aimed to give an information about aphid list, their ecology and damage and also make a contribution to Turkish aphid fauna.

Material and Methods

In this study, aphid species on *Malus* spp., *Pyrus* spp., *Crataegus* spp. and *Cydonia oblonga* were searched in Niğde (Central province, Bor, Ulukışla, Çiftlik, Çamardı and Altunhisar) and their surroundings.

Collection and preparation of samples have been processed according to the principals of the Hille Ris Lambers (1950) and Bodenheimer & Swirski (1957). Species were identified according to Bodenheimer & Swirski (1957), Tuatay & Remaudiere (1964), Blackman & Eastop (2000), Çanakçıoğlu (1975). Systematical knowledge, host plants and synonyms of determined species were taken from Blackman & Eastop (1994, 2000), Çanakçıoğlu (1975), Toros et al. (2002). Voucher specimens were kept at the Biology Department of Niğde University.

Results and Discussion

During this study, about 230 samples were picked up from different parts of the study area and each sample was analyzed individually. As a result, 15 aphid species were identified on pome fruit trees. General features of each species were summarized alphabetically.

Aphidinae: Aphidini

Aphis citricola van der Goot, 1912

Distribution: Widespread in North America, South Africa, Asia, New Zealand and some part of the Europe (Tuatay, 1993). Recorded from Adana, İstanbul and Ankara in Turkey (Tuatay & Remaudiere, 1964; Tuatay, 1993). Two samples were collected from Çamardı and Central province.

Note: They were collected on both *Malus* spp. and *Cydonia oblonga*. Rare species.

Aphis craccivora Koch, 1854

Distribution: Originated from Palearctic warm temperate region but now almost worldwide. Recorded from Bursa, Bolu (Gerede), İstanbul, Burdur, Artvin, Niğde and Ankara in Turkey (Bodenheimer & Swirski, 1957; Tuatay & Remaudiere, 1964; Tuatay, 1993; Gürbüz, 2001; Toros et al., 2002) and collected from Çamardı and Central province.

Note: Only two samples were collected on *Malus* spp. Rare species.

Aphis gossypii Glover, 1877

Distribution: Originated from Palaearctic region but now distributed worldwide, especially in greenhouses. Recorded from Aegean region, Iğdır, Mersin, Antalya (Kaş), Bolu (Gerede), Niğde, Kahramanmaraş and Eastern Mediterranean region in Turkey (Bodenheimer & Swirski, 1957; Gürbüz, 2001; Aslan, 2002; Toros et al., 2002) and collected from Central province, Bor and Çamardı.

Note: Three samples were collected on *Malus* spp. Rare species.

Aphis pomi de Geer, 1773

Distribution: Distributed through Europe, the Middle East, North-west India, Pakistan and North America (Blackman & Eastop, 2000). Recorded from various parts of Turkey (Tuatay, 1993; Aslan, 2002; Toros et al., 2002). In Niğde, they were recorded from Central province, Çiftlik and Bor.

Note: Twelve samples were collected on *Malus* spp. Common species.

Rhopalosiphum insertum (Walker, 1849)

Distribution: Originated from North America but now distributed in Palaearctic region (Blackman & Eastop, 2000). Recorded from Ankara and Van (Tatvan) in Turkey (Tuatay & Renaudiere, 1964; Düzgüneş et al., 1982). Recorded from Central province, Çamardı, Bor, Ulukışla and Altunhisar.

Note: 24 samples were recorded on *Crataegus* sp. Common species.

Schizaphis pyri Shaposhnikov, 1952

Distribution: Distributed most part of the Europe, South Russia, Siberia and Central Asia (Nieto Nafria, 1985; Pashchenko, 1988). This species can be considered as new record for the Turkish aphid fauna according to present literature. Eight samples were collected from Central province, Çamardı, Bor, Ulukışla and Altunhisar.

Note: Recorded on *Pyrus elaeagnifolia*. Rare species.

Aphidinae: Macrosiphini

Aulacorthum solani (Kaltenbach, 1843)

Distribution: Originated from Europe but now distributed large parts of the world (Blackman & Eastop, 2000). Recorded from Eskişehir, Erzincan, Van, İstanbul, Niğde and East Mediterranean region (Tuatay, 1988; Toros et al., 2002). Collected from central province and Bor.

Note: Only two samples were collected on *Cydonia oblonga*. Rare species.

Allocotaphis quaestionis (Bömer, 1942)

Distribution: Distributed in Carpathians, Caucasus and Alps (Blackman & Eastop, 2000). Previously recorded as a new species for Turkish aphid fauna (Görür, 2002), and collected from Central province, Çamardı and Altunhisar in Niğde.

Note: They were collected on ***Malus*** spp. Rare species.

Dysaphis devectora (Walker, 1849)

Distribution: Widespread in Europe (Blackman & Eastop, 2000). Recorded from Malatya, Ankara, Kahramanmaraş, Diyarbakır, İçel, Hatay and Mediterranean region in Turkey (Tuatay & Remaudiere, 1964; Ölmez, 2000; Aslan, 2002; Toros et al., 2002). Totally 55 samples were collected from Central province, Bor, Ulukışla, Altunhisar and Çiftlik.

Note: They were collected on ***Malus*** spp. Frequent species.

Dysaphis plantaginea (Passerini, 1860)

Distribution: Widespread in Europe, in the Middle East, Central Asia, Pakistan and Africa. Recorded from different parts of Turkey (Bodenheimer & Swirski, 1957; Aslan, 2002; Toros et al., 2002). Totally 52 samples were collected from Central province, Bor, Ulukışla, Altunhisar and Çiftlik.

Note: They were collected from ***Malus*** spp. Frequent species.

Dysaphis pyri (Boyer de Fonscolombe, 1841)

Distribution: Widespread in Europe, Central Asia, the Middle East, North Africa and Pakistan (Blackman & Eastop, 1994). Recorded from Ankara, Isparta, İzmir, Niğde, İstanbul, Malatya, Van, Konya, Kahramanmaraş and Adana (Bodenheimer & Swirski, 1957; Tuatay & Remaudiere, 1964; Giray, 1974; Erkin, 1983; Ölmez, 2000; Aslan, 2002, Toros et al., 2002). In Niğde, recorded from Çamardı and Ulukışla.

Note: Four samples were recorded from ***Pyrus elaeagnifolia***. Rare species.

Nearctaphis bakeri (Cowen, 1895)

Distribution: Distributed in North America but now widespread in Europe, Egypt, Afghanistan, Iran, India and Japan (Blackman & Eastop, 2000). Recorded as a new species for the Turkish aphid fauna by Görür (2002), and also recently recorded from Adana in Turkey (Toros et al., 2002). 17 samples were collected from Central province, Çamardı, Bor and Altunhisar.

Note: They were recorded on both ***Malus*** spp. and ***Trifolium***. Common species.

Ovatus insitus (Walker, 1849)

Distribution: Widespread throughout Europe, Central Asia, Siberia, Israel, Turkey and Iran (Heie, 1994; Blackman & Eastop, 2000). Recorded from Ankara, Niğde, Diyarbakır, Elazığ, Sakarya, Trabzon and İzmir in Turkey (Tuatay & Remaudiere, 1964; Tuatay, 1991). Recorded from all towns except Çamardı.

Note: 22 samples were collected on **Cydonia oblonga**. Common species.

Lachninae: Lachnini

Pterochloroides persicae (Cholodkovsky, 1899)

Distribution: Distributed throughout Mediterranean area, in the Middle East, South-West Asia and recently introduced to North America and New Zealand (Blackman & Eastop, 1994, 2000). Recorded from Ankara, Adana, Hatay, İçel, Kahramanmaraş and Niğde in Turkey (Bodenheimer & Swirski, 1957; Gürbüz, 2001; Aslan, 2002; Toros et al., 2002). Recorded from Central province, Bor, Çamardı, Ulukışla, Çiftlik and Altunhisar.

Note: 39 samples were recorded on **Pyrus** spp. Common species.

Pyrolachnus pyri (Buckton, 1899)

Distribution: Distributed in Iran, Bahrain, Pakistan, India, Nepal, Sri Lanka, Korea and China (Blackman & Eastop, 1994). According to present literature, it was a new record for the Turkish aphid fauna. Samples were collected from Central province and Çamardı.

Note: Two samples were collected on **Pyrus communis**. Rare species.

As a result, 15 aphid species were determined on pome fruit trees in Niğde province. **Pyrolachnus pyri** and **Schizaphis pyri** are new records for the Turkish aphid fauna. However, there were only 15 species were listed for Niğde Province in previous literature, in this work 15 aphid species were recorded only on pome fruit trees. Recent studies indicated that there is going to be much more species for the Turkish aphid fauna and it can be expected that Turkish aphid fauna is going to have more than 400 species (Toros et al., 2003).

Özet

Niğde Yöresinde yumuşak çekirdekli meyve ağaçlarındaki Afit (Homoptera: Aphididae) türleri

1999 ve 2001 yılları arasında düzenlenen bu çalışma sonucunda Niğde ve yöresinde yumuşak çekirdekli meyve ağaçlarında zararlı olan 15 afit türü belirlenmiş olup, bunlar içinde **Schizaphis pyri** ve **Pyrolachnus pyri** Türkiye afit faunası için yeni kayıt niteliğindedir.

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