

Araştırma Makalesi/Research Article (Original Paper)

Eriophyoid Mites (Acari: Eriophyoidea) on Fruit Trees in Yalova, Turkey

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Abstract: This study was conducted to determine Eriophyoid (Prostigmata: Acari) mites on fruit trees of Yalova (Çınarcık, Armutlu, Termal, Esenköy, Çiftlikköy) in 2016-2017 years. These species are *Aceria avanensis* (Bagdasarian 1970), *Colomerus vitis* (Pagenstecher 1857), *Aculus schlechtendali* (Nalepa 1890), *A. fockeui* (Nalepa and Trouessart 1891), *Calepitrimerus baileyi* (Keifer 1938), *Epitrimerus pyri* (Nalepa 1891) *Phytoptus avellana* (Nalepa 1889) and *Aceria diospyri* (Keifer 1944). *A. diospyri* is a new record for Turkish Acaro fauna.

Keywords: Eriophyoid, Fruit trees, New record, Yalova, Turkey

Yalova İlinde Meyve Ağaçları Üzerindeki Eriophyoid Akarlar

Öz: Bu çalışma 2016-2017 yılları arasında Yalova ilinde (Çınarcık, Armutlu, Termal, Esenköy, Çiftlikköy) meyve ağaçları (Ceviz, Üzüm, Elma, Erik, Fındık, Trabzon hurması) üzerindeki eriophyoid (Prostigmata: Acarina) akarların tespiti amacıyla yapılmıştır. Çalışma sonucunda, *Aceria avanensis* (Bagdasarian 1970), *Colomerus vitis* (Pagenstecher 1857), *Aculus schlechtendali* (Nalepa 1890), *A. fockeui* (Nalepa and Trouessart 1891), *Calepitrimerus baileyi* (Keifer 1938), *Epitrimerus pyri* (Nalepa 1891) *Phytoptus avellana* (Nalepa 1889) and *A. diospyri* (Keifer 1981) türleri tespit edilmiştir. Bu türlerden *A. diospyri* Türkiye akar faunası için yeni kayıt niteliğindedir.

Anahtar kelimeler: Eriophyoid, Meyve ağaçları, Yeni kayıt, Yalova, Türkiye

Introduction

Eriophyoid mites are arthropods that infest plant hosts, including crops, all over the world (Lindquist et al. 1996). Noticeable plant damage may be caused directly by mite feeding or by transmission of plant pathogens; therefore many species are pests of great economic importance. Crops with significant eriophyoid pests include citrus, apple, grape, hazelnut, coconut, tomato, corn and wheat, while a number of eriophyoid species are considered as invasive and pose a quarantine threat to several countries. Eriophyid mites have a worldwide distribution and more than 3690 species are known. Members of Eriophyidae live on trees, shrubs and herbaceous plants, causing injury to leaves, buds and fruits (Amrine et al. 2003; Denizhan et al. 2015).

Eriophyoidea are still many species to be discovered. Knowledge of the Turkish eriophyoid fauna is still fragmentary. Eriophyoid mites from Ankara were reported in 2003-2006 Denizhan et al. (2015). Geographical position and botanical history of this country makes it particularly relevant for a potentially rich eriophyoid biodiversity (Ekim and Guner 2000; Karagöz 2003). Until now, only approximately 101 species of eriophyoid mites had been recorded from Turkey (Denizhan et al. 2015).

Material and Methods

The leaves were collected in the province of Yalova (Çınarcık, Armutlu, Termal, Esenköy, Çiftlikköy), Turkey during June and July, 2015-2017 on vineyard, walnut, apple, prune, hazelnut, persimmon. At laboratory, mites were collected from the samples with examination by a dissection microscope (Leica ES2).

Results and Discussion

The main goal of this work is to determine eriophyid (Acarina: Eriophyidae) mites fauna on fruit trees

(vineyard, walnut, apple, prune, hazelnut, persimmon) of Yalova (Çıncık, Armutlu, Termal, Esenköy, Çiftlikköy) during 2016-2017 years. As a result *Aceria avanensis* (Bagdasarian 1970) *C. vitis* (Pagenstecher 1857) *Aculus schlechtendali* (Nalepa 1890), *Aculus fockeui* (Nalepa and Trouessart 1891) *Calepitrimerus baileyi* (Keifer 1938), *Epitrimerus pyri* (Nalepa 1891) *Phytoptus avellana* (Nalepa 1889) and *Aceria diospyri* (Keifer 1981) were determined. *A. diospyri* is new record for Turkey. This article presents the results of a 2-year study on fruit trees eriophyoid acars in Yalova. The aim of this study was to collect and identify eriophyoid species infesting fruit trees (vineyard, walnut, apple, prune, hazelnut, persimmon). Understand of host specificity is necessary to develop effective control strategies and is fundamental to the application of fruit trees.

Superfamily: Eriophyoidea Nalepa, 1898

Family: Eriophyidae Nalepa, 1898

Aceria diospyri (Keifer 1981)

Female: 140-170 μm long, 30 μm wide; gnathosoma 20 μm long; gnathosomal seta 3-4; chelicerae 10-11 μm ; Prodorsal shield 22 μm long; Prodorsal shield 25 μm wide; dorsal seta 13 μm long.

Foreleg 18 μm long; tibia 4 μm ; Tarsus 4 μm ; tarsal solenidion 7 μm ; empodium 6 μm long; empodium 5 rayed.

Hindleg 19 μm long; tibia 4 μm ; tarsus 4 μm ; tarsal solenidion 7 μm ; empodium 7 μm long; empodium 5 rayed.

Genitalia 18 μm long; 13 μm wide; female genital coverflap 12-14 furrows; genital setae 9 μm .

Type data. *Diospyros kaki* L.

Geographic distribution. Palaearctic.

Damage on host plant. The mites develop bud scales and under the fruit on persimmon and aid premature dropping.

Distribution in Yalova. Termal, 10.07.2016, 08.08.2017. (Host plant)

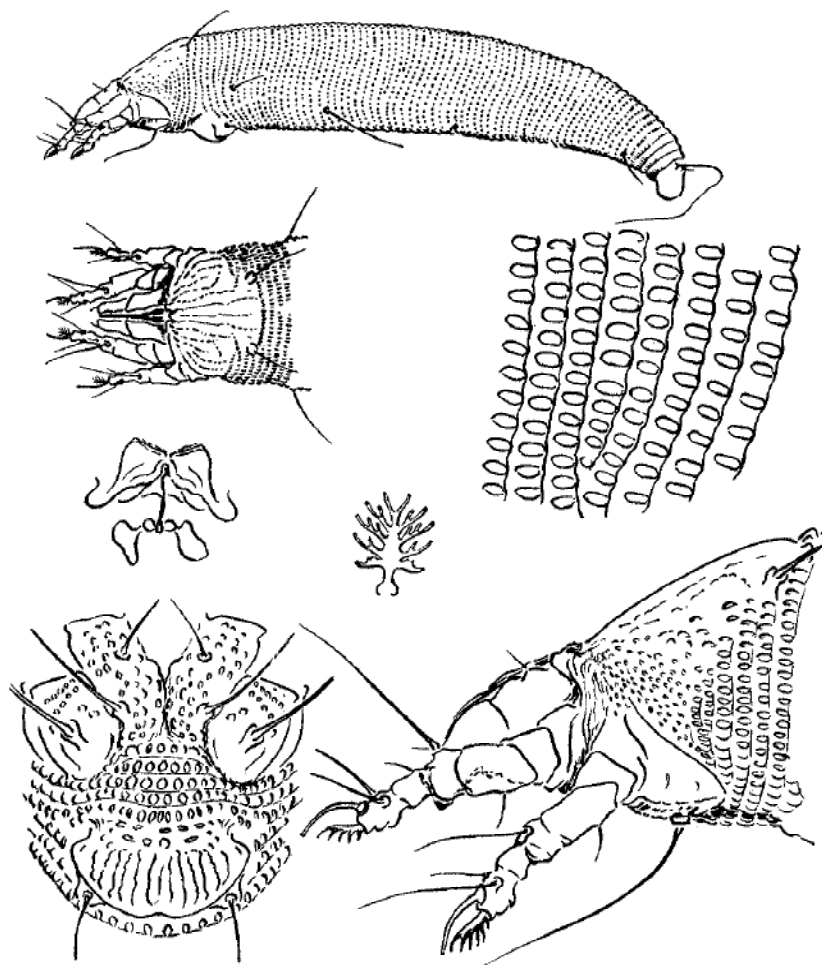


Figure 1. *Aceria diospyri* (Keifer, 1944)

Aceria avanensis (Bagdasarian 1970)

Type data. *Juglans regia* L., walnut (Juglandaceae)

Geographic distribution. Palaearctic.

Relation to the host plant. A gall-making mite causing small, protruding pouch-like and warty galls on the leaf lamina which may also appear to be deformed.

Distribution in Yalova. Termal, Armutlu, 15.07.2016, 22.07.2017. (Host plant)

Colomerus vitis (Pagenstecher 1857)

Type data. *Vitis vinifera* L., grapevine (Vitaceae)

Geographic distribution. Africotropical, Australian, Nearctic, Neotropical, Palaearctic.

Relation to the host plant. Gall-making mite (erineum).

Distribution in Yalova. Esenköy, Çınarcık 12.08.2016, 19.07.2017. (Host plant)

Aculus schlechtendali (Nalepa 1890)

Type data. *Malus domestica* Borkh. (Rosaceae)

Geographic distribution. Antarctic, Australian, Indomalayan, Nearctic, Neotropical, Palaearctic.

Relation to the host plant. Vagrant. This mite causes pitting and rusting of young leaves.

Distribution in Yalova. Termal, Esenköy 13.06.2016, 24.07.2017. (Host plant)

Aculus fockeui (Nalepa and Trouessart 1891)

Type data. *Prunus domestica* L. (Rosaceae)

Geographic distribution. Africotropical, Australian, Indomalayan, Nearctic, Neotropical, Palaearctic.

Relation to the host plant. Vagrant. This species induces yellow leaf spots in Spring

Distribution in Yalova. Yalova; Termal, 21.08.2016, 23.07.2017. (Host plant)

Calepitrimerus baileyi (Keifer 1938)

Type data. *Malus domestica* Borkh. (Rosaceae)

Geographic distribution. Antarctic, Nearctic, Palaearctic.

Relation to the host plant. Vagrant. The mites survive the leaf, breed slight browning

Distribution in Yalova. Armutlu, 11.08.2016, 27.08.2017. (Host plant)

Epitrimerus pyri (Nalepa 1891)

Type data. *Pyrus communis* L., pear (Rosaceae)

Geographic distribution. Antarctic, Australian, Nearctic, Neotropical, Palaearctic.

Relation to the host plant. Vagrant and refuge-seeking mite causing leaf margin Rolling.

Distribution in Yalova. Çınarcık, Esenköy, 15.07.2016, 27.09.2017. (Host plant)

Phytoptus avellana (Nalepa 1889)

Type data. *Corylus avellana* L., hazelnut (Betulaceae)

Geographic distribution. Australian (Tasmania), Nearctic, Palaearctic (Ozman and Toros 1997a; Weber 2007).

Relation to the host plant. Gall-making and refuge-seeking mite, causing bud galls (Ozman and Toros 1997a; Weber 2007).

Distribution in Yalova. Çiftlikköy 27.08.2017. (Host plant)

All datas references taken from Denizhan et al. (2015).

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