Persian Journal of Acarology, Vol. 2, No. 2, pp. 331–334.

Corresspondence

Eriophyoidea (Acari: Trombidiformes; Prostigmata) fauna of Shiraz County, Iran

Nazanin Doryanizadeh[1]* , Mohammad Ali Akrami[1] & Hashem Kamali[2]

1 Depertment of Plant Protection, Faculty of Agriculture, Shiraz University, Shiraz, Iran; *E-mails: n.doryanizadeh@gmail.com*, *akrami@shirazu.ac.ir*

2. Agricultural and Natural Resources Research Center of Khorasan Razavi, Mashhad, Iran; E-mail: hashemkamali@gmail.com

* Corresponding author

Mites belong to Eriophyoidea are important due to their feeding damage, their role in the transmission of plant pathogens and as potantial biological control agents against weeds (Monfreda *et al*. 2010). It is estimated that world fauna of eriophyoid mites could be increased to 35000 to 50000 species. Thus, discovery of many new species is not surprising (Amrine *et al*. 2003).

During 2010–11, 16 species of Eriophyoidea belonging to two families and eight genera were collected from 16 plant species from Shiraz (Fars Province). One species is a new record to mite fauna of Iran (marked by *) and three are unknown species (marked by **). The species are listed in Table 1.

The mites were separated by an insect pin, cleared in a droplet of glacial lactic acid, and then mounted on a microscopic slide using Hoyer's medium (de Lillo & Skoracka 2010).

Table 1. List of Eriopyoidea species of Shiraz county.

Species	Host Species	Host Relation	Collection record	Reference
Eriophyidae				
Acarolox farsi Kamali & Soleimani 2006	*Cynodon dactylon* (L.) Pers. (Poaceae)	lives in the leaf sheath; causes leaf rolling	15 specimens (14 ♀, Shiraz; 1 ♀, Bajgah)	Kamali & Soleimani (2006)
Acarolox sp. **	*Trogopogon graminifolius* DC. Rech (Asteraceae)	lives in leaf sheaths and near the ligules of tender plants; no apparent injury	8 specimens (♀, Bajgah)	Unknown species
Aceria sp.	*Alhagi pseudalhagi* (M. Bieb.) Desv. (Fabaceae)	incomplete inflorescence; inflorescence changes to cauliflower-like gall that not produces seeds	6 specimens (4 ♀, Bajgah; 2 ♀, Bajgah)	-
Aceria drabae (Nalepa) 1890	*Cardaia draba* (L.) (Brassicaceae)	malformation of inflorescence; flowers changes to gall and infested flowers do not produce seeds	9 specimens (4 ♀, Bajgah; 5 ♀, Bajgah)	Lipa *et al*. (1998)

Table 1. Continued.

Species	Host Species	Host Relation	Collection record	Reference
Eriophyidae				
Aceria granati (Canestrini & Massalongo) 1894	*Punica granatum* L. (Punicaceae)	rolling the leaves in tight rolls from the edges of the leaves on a whole shoot	11 specimens (11 ♀, Shiraz)	Keifer (1952)
Aceria macrochelus (Nalepa) 1891	*Acer cinerascens* (Boiss.) Yalt. (Aceraceae)	forms erineum on the leaves	4 specimens (4 ♀, Kharameh)	Kamali & Amrine (2005)
Aceria malherbae Nuzacci 1985	*Convolvulus arvensis* L. (Convolvulaceae)	bud and leaf malformation	12 specimens (3 ♀, Shiraz; 1 ♀, Shiraz; 5 ♀, Bajgah; 3 ♀, Shiraz)	Nuzzaci *et al.* (1985)
Aceria mashhadiensis Xue 2009	*Polygonum arviculare* L. (Polygonaceae)	leaf rolling from the edges of the leaves	11 specimens (3 ♀, Bajgah; 8 ♀, Bajgah)	Xue *et al*. (2009)
Aceria oleae (Nalepa) 1900	*Olea europaea* L. (Oleaceae)	malformation of terminal shoots	9 specimens (1 ♀, Shiraz; 8 ♀, Kavar)	Kamali & Amrine (2005)
Aceria tristriatus (Nalepa) 1890	*Juglans regia* L. (Juglandaceae)	blister-like galls near the veins on both leaf surfaces	7 specimens (7 ♀, Shiraz)	Keifer (1952)
Acerimina sp **	*Rosa hybrid* L. (Rosaceae)	witche's broom symptom in terminal twigs	9 specimens (9 ♀, Bajgah)	Unknown species
Eriophyes pyri (Pagenstecher)	*Pyrus communis* L. (Rosaceae)	blisters on the leaves	3 specimens (3 ♀, Bajgah)	Keifer (1938)
Shevtchenkella ulmi (Farkas) 1960	*Ulmus campestris* (L.) (Ulmaceae)	vagrant on the outside of the leaves; results in witche's broom	5 specimens (5 ♀, Bajgah)	Denizhan & Çobanoğlu (2010)
Tetra sp. **	*Galium aparine* L. (Rubiaceae)	flower galls; distortion of the inflorescence	8 specimens (12 ♀, Bajgah)	Unknown species
Tetra glycirrhyza Denizhan *et al*. 2009*	*Glycirrhyza glabra* L. (Fabaceae)	vagrant on leaves and flowers; no apparent damage	4 specimens (4 ♀, Bajgah)	Denizhan *et al*. (2007)
Diptilomiopidae				
Rhyncaphytoptus ficifoliae Keifer	*Ficus carica* L. (Moraceae)	vagrant under the surface of the leaves; no apparent damage	11 specimens (8 ♀, Shiraz; 3 ♀, Shiraz)	Keifer (1939)

In spite of the great significance attached to eriophyoid, little investigation has been carried out on this superfamily in Iran and its funa poorly studied as follows: Hamedan Province (Malek Mohammadi 2002), Khorasan Razavi Province (Kamali 1998), Guilan Province (Hajizadeh & Hoseini 2004a, b), Khuzestan Province (Ramezani *et al*. 2005) and the recent study in Shiraz City. Eighty four species of eriophyoid mites have been reported from Iran until 2009 (Xue *et al*. 2009). There are still many parts in Iran that have not been invetigated for the existence of eriophyoid species. Therefore, it is suggested that many new species will be found in future.

Ultimately, an inclusive faunistic survey of eriophyoid species could help us to evaluate the environmental effects on their success, the potential risk of some species in new regions, and their modes of dispersal (de Lillo & Skoracka 2010).

Acknowledgement

Hereby, we would like to express our gratitude to Mr. Moslem Behmanesh (M. Sc. of Entomology from Shiraz University) for his helps in collecting of some species.

References

Amrine, J.W., Stasny, T.A. & Flechtmann, C.H.W. (2003) Revised keys to world genera of Eriophyoidea (Acari: Prostigmata). *Indira Publishing House*. Michigan.USA. 244 pp.

Amrine, J.W., Jr. & Stasny, T.A. (1994) *Catalogue of the Eriohyoidea (Acari: Prostigmata) of the world.* Indira Publishing House. West Bloomfield, Michigan. USA. 798 pp.

de Lillo, E. & Skoracka, A. (2010) What's cool on eriophyoid mites? *Experimental & Applied Acarology*, 51: 3–30.

Denizhan, E., Monfreda, R., Çobanoglu, S. & de Lillo, E. (2007) Studies on the eriophyoid mites (Acari: Eriophyoidea) of Turkey: Three new species associated with Fabaceae. *International Journal of Acarology*, 33 (1): 21–27.

Denizhan, E. & Çobanoğlu, S. (2010) Van Gölü havzasında *Ulmus campestris* L. üzerinde tespit edilen Eriophyoid akarlar (Acari: Prostigmata: Eriophyoidea). *Türkiye Entomoloji Dergisi*, 34 (4): 543–549.

Hajizadeh, J. & Hoseini, R. (2004a) Introduction of Eriophyoidea fauna of fruit plants in Guilan. *16th Iranian Plant Protection Congress*. Vol. 1. Tabriz, p. 278.

Hajizadeh, J. & Hoseini, R. (2004b) Introduction of Eight species fauna of jungle trees in Guilan. *16th Iranian Plant Protection Congress*. Vol. 1. Tabriz, p. 279.

Keifer, H. H. (1952). *The eriophyid mites of California*. University of California Press. Berkeley & Los Angeles. 123 pp.

Lipa, J.J., Murillo, J., Castro, F., Viñuela, E., Estal, P.D., Budia, F., & Caballero, P. (1998) First record of *Aceria drabae* (Nalepa) (Acarina: Eriophyidae) in Spain. *Boletín de Sanidad Vegetal, Plagas, 24* (4): 797–802.

Kamali, H. (1998) *Collection and identification of family Eriophyidae and their natural enemies in fruit gardens of Mashhad*. M. Sc.thesis. Guilan University. Iran. 148 pp.

Kamali, H. & Amrine, J. W. (2005) Studies on the eriophyid mites (Acari: Eriophyidae) of Iran: two new species of *Aceria*, with a key to Iranian species. *International Journal of Acarology*, 31 (1): 57–62.

Kamali, H. & Soleimani, R. (2006) A new *Acaralox* species (Acari: Eriophyidae) from bermudagrass in Iran. *International Journal of Acarology*, 32 (2): 185–187.

Keifer, H.H. (1938) Eriophyid Studies I. *Bulletin of Entomology*, California Department of Agriculture, p. 183.
Keifer, H. H. (1954) The eriophyid mites of California. *Bulletin of the California Insect Survey*. Universiy of Califonia press, 2(1): 128 pp.
Keifer, H. H. (1939) Eriophyid Studies III. *Bulletin of Entomology*, California Department of Agriculture, p. 9.
Malek Mohammadi, M. (2002) Fauna of eriophuid mites (Acari: Eriophyidae) from fruit and unfruitful trees in Hamedan Province. *15th Plant Protection Congress of Iran*. Vol. 1. Kermanshah, pp. 258–259.
Monfreda, R., Lekveishvili, M., Petanovice, R., & Amrine, J. W. (2010) Collection and Detection of eriophyoid mites. *Experimental and Applied Acarology*, 51: 273–282.
Nuzzaci, G., Mimmocchi, T., & Clement, S. L. (1985) A new species of *Aceria* (Acari: Eriophyidae) from *Convolvulus arvensis* L. (Convolvulaceae) with notes on other eriophyid associates of convolvulaceous plants. *Entomologica,* 20: 81–89.
Ramezani, L., Mosaddegh, M.S. & Shishebor, P. (2005) Fauna of the superfamily Eriophyoidea of Khuzestan Province. *Scientific Journal of Agriculture*, 29(3): 139–143.
Xue, X., Sadeghi, H. & Hong, X. (2009) List of eriophyoid mites from Iran. *International Journal of Acarology*, 35(6): 459–468.

Received: 27 December 2012
Accepted: 26 January 2013

فون کنه‌های Eriophyoidea (Acari: Trombidiformes; Prostigmata) در شهرستان شیراز، ایران

نازنین دریانی‌زاده، محمدعلی اکرمی و هاشم کمالی

تاریخ دریافت: ۱۳۹۱/۱۰/۶
تاریخ پذیرش: ۱۳۹۲/۱۱/۶