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New evidence of parasitoids of pest aphids on roses and grapevine in Turkey (Hem., Aphididae; Hym., Braconidae, Aphidiinae)

Abstract - *Aphidius eglanteriae* as a parasitoid of *Chaetosiphon tetrarhodum*/*Rosa* is newly recorded for Turkey. Short information about its parasitism rate and distribution in Isparta Province, Turkey, is given. Another new information pertains to the association between *Aphidius matricariae - Aphis illinoisensis - Vitis vinifera*.

Riassunto - *Nuova segnalazione di parassitoidi di afidi su rose e vite in Turchia (Hem., Aphididae; Hym., Braconidae, Aphidiinae)*

Viene segnalato per la prima volta in Turchia *Aphidius eglanteriae* Haliday come parassitoide di *Chaetosiphon tetrarhodum*/*Rosa* (Walker). Vengono fornite anche indicazioni sulla percentuale di parassitizzazione e la sua distribuzione nella provincia di Isparta. Ulteriori informazioni riguardano l'associazione tra *Aphidius matricariae - Aphis illinoisensis - Vitis vinifera*

Key words: *Aphidius eglanteriae*, *Aphis illinoisensis*, *Aphidius matricariae*, *Chaetosiphon tetrarhodum*, grapevine, roses

Roses

Turkey is one of the biggest producer of the rose oil and rose concrete in the world (Bayrak & Akgül, 1994). Only chemical control is used to decrease harmful aphids quantity in Rose (*Rosa damascena*) plantations of Isparta Province. *Chaetosiphon tetrarhodum* (Walker), is one of main pest aphid of the Damask rose in Isparta Province, Turkey. This aphid causes weakness of plant by sucking activities and problems for producing great quantitities of honeydew, which is deposited on the leaves. Both these phenomena cause loss of yield of Damask rose flowers at the harvest time.

During our investigation we reared in the laboratory *Aphidius eglanteriae* Haliday, (1834), from the field sampled mummified *C. tetrarhodum* on *Rosa damascena* (Figure 1). It was found in three localities of Isparta Province: Isparta, Kuyucok and Sorkuncak. In July parasitism rate caused by attacking parasitic wasps to *Ch. tetrarhodum* was 4.35% in Kuyucok, 3.81% in Isparta and 0.92% in Sorkuncak. In September parasitism rate was 6.5% in Isparta. Low parasitism rate probably was caused by high temperature.

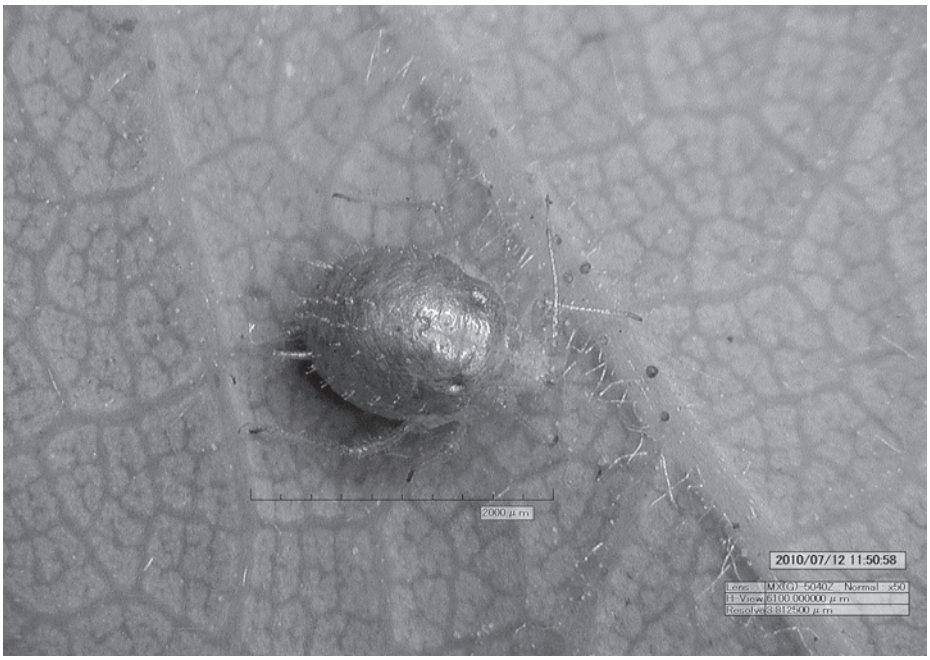

Fig. 1 - Mumified *Chaetosiphon tetrarhodum* on a leaf of *Rosa damascena*

This species is oligophagous and it attacks aphid species belonging to the genera *Chaetosiphon* and *Longicaudus* (Kavallieratos *et al*., 2004). It is distributed mainly in Europe (Starý, 1976; Kavallieratos *et al*., 2004). The association is new for Turkey (El-Mali et al. 2004; Aslan and Karaca 2005; Tomanović *et al*., 2008).

A possibility of mass-rearing and release of this parasitoids in the rose fields should be further considered.

An over-all biodiversity of beneficial organisms in the biocenoses of oil-bearing rose was presented in Bulgaria (Balevski *et al*., 2008). However, merely *Aphidius ervi* Hal., *Aphidius rosae* Hal. and *Ephedrus laevicollis* (Thoms.) were listed as participating in the rose ecosystem. As no host aphid associations were included, we may presume an association between *A. ervi* and *A. rosae* to *Macrosiphum rosae* and *E. laevicollis* possibly to *Chaetosiphon* or *Myzaphis* (P. Stary, pers. comm.).

Grapevine

On 21 September 2010, we found *Aphis illinoisensis* (Shimer) on *Vitis vinifera* in Isparta Province for the first time (Barjadze *et al*., unpublished). There were big colonies of the grapevine aphids on the shoots and leaves of the grape. Through mechanical injury and honeydew production this aphid represents possibly an important economic threat to viticulture.

One male specimen of *Aphidius matricariae* Haliday was reared from an aphid colony on 21 September 2010. This parasitoid was recorded from different Provinces of Turkey, including Isparta Province (El-Mali *et al*., 2004; Aslan and Karaca, 2005) but the presented association between *Aphidius matricariae* - *Aphis illinoisensis* - *Vitis vinifera* is recorded for the first time in the world. Further investigations will show whether *A. matricariae* is effective against grapevine aphids to use it in IPM. Also, it is recommendable to find further native enemies that attack *A. illinoisensis* or introduce them for controlling this invasive exotic grapevine aphid in Turkey.

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