A New Record of Fruit Fly (Diptera: Tephritidae) From Turkey and Contributions to Fauna of Gaziantep Province

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ABSTRACT

Fruit flies (Diptera: Tephritidae) is one of the most important Diptera families, some species damage fruits, and cause millions of dollars in every years. In this study, adult fruit fly materials were collected from Gaziantep province between 2010 and 2021 from possible host plants using insect net. Obtained materials were examined, and were determined that 15 species. All species recorded for the first time from Gaziantep province. In addition, Goniurellia tridens (Hendel, 1910) recorded as a new record from Turkey. With these contributions, Gaziantep fruit fly fauna increased to 44 species. In the article, examined materials, current list of Gaziantep fruit fly fauna and adult and wing figures of Goniurellia tridens (Hendel, 1910) were given.

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A New Record of Fruit Fly (Diptera: Tephritidae) From Turkey and Contributions to Fauna of Gaziantep Province

Türkiye’den Yeni Bir Meyve Sineği (Diptera: Tephritidae) Kaydı ve Gaziantep İli Faunasına Katkılar

Meyve sinekleri familyası (Diptera: Tephritidae), en önemli sinek familyalarından birisidir, bazı türler meyvelere zarar verir ve her yıl milyonlarca dolarlık zarara neden olur. Bu çalışmada, ergin meyve sineği örnekleri Gaziantep ilinden, böcek atrabı kullanarak muhtemel konukçuluk bitkiler üzerinden 2010 ve 2021 yılları arasında toplanmıştır. Elde edilen örnekler incelenmiş ve 15 tür belirlenmiştir. Kaydedilen tüm türler Gaziantep ilinden ilk kez tespit edilmiştir. Ek olarak, Goniurellia tridens (Hendel, 1910) türü Türkiye’den il kez bu çalışma ile kaydedilmiştir. Bu katkılar ile birlikte, Gaziantep meyve sinekleri faunasının güncel listesini ve Goniurellia tridens (Hendel, 1910) türünün ergin ve kanat fotoğrafları verilmiştir.

Keywords:
Tephritidae
Meyve sinekleri
Fauna
Yeni kayıt
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Introduction

Tephritidae is one of the largest families of Diptera order and it includes about 492 genera and, 4716 species (Pape et al., 2011). Several species of fruit flies (Diptera: Tephritidae) are invasive pests of horticultural crops worldwide, due to their adaptation to various regions, high polyphagia and rapid reproduction (Sarwar, 2015).

In recent years, many studies carried out to determine fruit flies fauna in Turkey. Several species recorded or identified as new over the two decades. In the recent studies, 9 new species (Terellia askaleensis Kütük et al., 2011; Tephritis ozaslanı Kütük et al., 2012; Terellia freidbergi Korneyev et al., 2013; Urophora turkeynesis Yaran and Kütük, 2014; Heringina arezoana Namin and Korneyev, 2015, Carposmyia liat Freidberg, 2016; Terellia agkuli Yaran et al., 2018; Tephritis turkeri Kütük and Yaran, 2020; Tephritis kutaki Yaran and Görmez, 2020) and 14 new records (Acidia (2013) and Yaran (2014). All the specimens are stored in Acidia and records, and 173 species have known up to date in the fauna in Gaziantep province. In this study, new specimens were collected and identified between 2010 and 2021 years in Gaziantep province. In this study, new specimens were contributed to the fauna of Gaziantep province. Together with this contribution, number of fruit fly species increased to 44 species in Gaziantep province. In addition, Goniurella tridens (Hendel, 1910) identified for the first time from Turkey, and number of fruit flies increased to 174.

Updated list of Tephritidae presented in Table 1 and, contributed species were given alphabetical order in the below. In addition, figures of male and female adults (wing, head and thorax) of new record presented in the below.

Results and Discussions

In this article, some contributions reported to the fruit fly fauna of Gaziantep province. Together with this contribution, number of fruit fly species increased to 44 species in Gaziantep province. In addition, Goniurella tridens (Hendel, 1910) identified for the first time from Turkey, and number of fruit flies increased to 174.

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Updated list of Tephritidae presented in Table 1 and, contributed species were given alphabetical order in the below. In addition, figures of male and female adults (wing, head and thorax) of new record presented in the below.

Acidia (Fallen, 1814)

Material examined: 1 ♂, Gaziantep, İslahiye, Fevzipaşa, 37° 05 N, 37° 37 E, 523 m, 10.05.2021; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

Bactrocera oleae (Rossi, 1790)

Material examined: 2 ♂, Gaziantep, Şehitkamil, Bilek, 37° 12 N, 37° 56 E, 513 m, 10.07.2018; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

Chaetorellia jaceae (Robineau - Desvoidy, 1830)

Material examined: 3 ♂♂, 2 ♀♀, Gaziantep, İslahiye, Türkbaehce, 37° 04 N, 36° 37 E, 519 m, 10.05.2010; 4 ♂♂, 2 ♀♀, Şanlıburun, Türkzu, 37° 05 N, 37° 21 E, 691 m, 10.05.2010; 2 ♂♂, Center, 37° 00 N, 37° 19 E, 843 m, 10.05.2010; 1 ♂, Oğuzeli, 36° 54 N, 37° 32 E, 643 m, 03.06.2010; 1 ♂, Karkamış, 36° 49 N, 37° 45 E, 507 m, 03.06.2010; 1 ♂, Araban, Yakacık, Karavaiz, 37° 27 N, 37° 47 E, 554 m, 16.06.2010; 1 ♂, Araban, Suvari, 37° 33 N, 37° 38 E, 968 m, 16.06.2010; 4 ♂♂, 1 ♂, Araban, Beydili, 37° 30 N, 37° 39 E, 910 m, 16.06.2010; 4 ♂♂, 1 ♂, Şahinbey, Kürüm, 36° 57 N, 37° 09 E, 903 m, 17.06.2010; 1 ♂, Şahinbey, Üğurtepe, 36° 57 N, 37° 05 E, 774 m, 17.06.2010; 1 ♂, Şahinbey, Çebeler, 37° 02 N, 37° 16 E, 942 m, 01.07.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

Euleia heraclei (Linnaeus, 1758)

Material examined: 4 ♂, Gaziantep, Araban, 36° 53 N, 37° 34 E, 518 m, 20.04.2010; 3 ♂♂, 2 ♀♀, İslahiye, Fevzipaşa, 37° 04 N, 37° 36 E, 513 m, 10.05.2011; Oğuzeli, 37° 57 N, 37° 30 E, 716 m, 28.06.2019; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

Goniurella longicauda Freidberg, 1980

Material examined: 1 ♂, Karkamış, 36° 49 N, 37° 45 E, 507 m, 03.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

Goniurella tridens (Hendel, 1910)

Material examined: 1 ♂, Gaziantep, 37° 15 N, 37° 37 E, 523 m, 10.05.2021; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

Comment: Goniurella tridens differs from other Goniurella Hendel 1927 species with following characters; cell Rs5 usually with 1-3 hyaline dots; distance between crossveins usually 1.5-2 times as long as r-m crossvain; 2 brown rays present in cell D in addition to ray on dm-cu ray usually reaching middle of the cell (For detailed description see Freidberg and Kugler, 1989). G. tridens distributed in Turkmenia, Bukhara, Iran, Pakistan, India, Israel and Saudi Arabia (Freidberg and Kugler, 1989). This species recorded for the first time together this research in Turkey.

Materials and Methods

According to previous studies (Yaran, 2009; Yaran et al., 2018b), 29 fruit fly species were reported in the fauna of Gaziantep province. In this study, new specimens were collected and identified between 2010 and 2021 years in order to contribute to the fauna of Gaziantep province. Obtained specimens were identified using following literatures and provided keys; Hendel (1927), White (1988), Freidberg and Kugler (1989), Korneyev and White (1993, 1999), Kütük (2003a, 2006), Korneyev (2003, 2006), Merz (1994), Görmez (2011), Korneyev et al. (2013) and Yaran (2014). All the specimens are stored in the Gaziantep University, Biology Department, Entomology Laboratory.
Table 1. Current list of fruit fly fauna in Gaziantep province

| No | Species | Reference |
|----|---------|-----------|
| 1. | Acanthophilus helianthi (Rossi, 1794) | Yaran, 2009 |
| 2. | Acicula coryli (Rossi, 1790) | Yaran, 2009 |
| 3. | Actinoptera discoidea (Fallen, 1814)* | Current study |
| 4. | Bactrocera oleae (Rossi, 1790)* | Current study |
| 5. | Campiglossa producta (Loew, 1844) | Yaran, 2009 |
| 6. | Ceratitis capitata (Wiedemann, 1824) | Yaran et al., 2018b |
| 7. | Chaetorellia carthami Stackelberg, 1929 | Yaran, 2009 |
| 8. | Chaetorellia jacea (Robineau - Desvoidy, 1830)* | Current study |
| 9. | Chaetorellia loricata (Rondani, 1830) | Yaran, 2009 |
| 10. | Chaetorellia succinea (Costa, 1844) | Yaran, 2009 |
| 11. | Chaetostomella cylindrica (Robineau - Desvoidy, 1830) | Yaran, 2009 |
| 12. | Euaresta bullans (Wiedemann, 1830) | Yaran, 2009 |
| 13. | Euleia heraclei (Linnaeus, 1758) * | Current study |
| 14. | Goniurellia longicauda Freidberg, 1980* | Current study |
| 15. | Goniurellia triden (Hendel, 1910)* | Current study |
| 16. | Rhagoletis cerasi (Linnaeus, 1758)* | Current study |
| 17. | Sphenella marginata (Fallen, 1814) | Yaran, 2009 |
| 18. | Tephritis acanthophilopsis Hering, 1938* | Current study |
| 19. | Tephritis dioscoreae (Loew, 1856) | Yaran, 2009 |
| 20. | Tephritis hurvitzi Freidberg, 1981 | Yaran, 2009 |
| 21. | Tephritis merzi Freidberg and Kütkü, 2002* | Current study |
| 22. | Tephritis postica (Loew, 1844) | Yaran, 2009 |
| 23. | Tephritis praecox (Loew, 1844)* | Current study |
| 24. | Tephritomyia lauta (Loew, 1869) | Yaran, 2009 |
| 25. | Terellia gynaecochroma (Hering, 1937) | Yaran, 2009 |
| 26. | Terellia luteola (Wiedemann, 1830) | Yaran, 2009 |
| 27. | Terellia serrulatae (Linnaeus, 1758) | Yaran, 2009 |
| 28. | Terellia virens (Loew, 1846) | Yaran, 2009 |
| 29. | Terellia winthemi (Meigen, 1826)* | Current study |
| 30. | Trupanea amoena (Frauenfeld, 1857) | Yaran, 2009 |
| 31. | Trupanea stellata (Fuesslin, 1775) | Yaran, 2009 |
| 32. | Urophora affinis (Frauenfeld, 1857) | Yaran, 2009 |
| 33. | Urophora aprica (Fallen, 1814)* | Current study |
| 34. | Urophora congria (Loew, 1862)* | Current study |
| 35. | Urophora cuspidata (Meigen, 1826) | Yaran, 2009 |
| 36. | Urophora dzieduszyckii Frauenfeld, 1867 | Yaran, 2009 |
| 37. | Urophora jacea (Hering, 1935) | Yaran, 2009 |
| 38. | Urophora mauritianica Macquart, 1851 | Yaran, 2009 |
| 39. | Urophora phalolepidis Merz and White, 1991* | Current study |
| 40. | Urophora quadridactila (Meigen, 1826) | Yaran, 2009 |
| 41. | Urophora solstitialis (Linnaeus, 1758) | Yaran, 2009 |
| 42. | Urophora stylata (Fabricius, 1775) | Yaran, 2009 |
| 43. | Urophora tenuior Hendel, 1910 | Yaran, 2009 |
| 44. | Urophora terebras (Loew, 1850)* | Current study |

**Rhagoletis cerasi** (Linnaeus, 1758)
Material examined: 2 ♂, 1 ♀, Gaziantep, Şehitkamil, Bilek, 37° 12 N, 37° 56 E, 513 m, 10.07.2018; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Tephritis acanthophilopsis** Hering, 1938
Material examined: 1 ♂, Gaziantep, Araban, Suvarlı, 37° 33 N, 37° 38 E, 968 m, 16.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Tephritis merzi** Freidberg and Kütkü, 2002
Material examined: 1 ♂, Gaziantep, Şahinbey, Türközü, 36° 05 N, 37° 21 E, 691 m, 10.05.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Tephritis praecox** (Loew, 1844)
Material examined: 1 ♂, 1 ♀, Gaziantep, Şehitkamil, Bilek, 37° 12 N, 37° 56 E, 513 m, 10.07.2018; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Terellia winthemi** (Meigen, 1826)
Material examined: 1 ♂, Gaziantep, Araban, Suvarlı, 37° 33 N, 37° 38 E, 968 m, 16.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Urophora aprica** (Fallen, 1814)
Material examined: 1 ♂, Gaziantep,şehir, Cevizli, 36° 54 N, 37° 03 E, 628 m, 01.06.2010; 1 ♂, Karkamış, 36° 49 N, 37° 45 E, 507 m, 03.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).
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Figure 1. Figures of *Goniurellia tridens* a) female, b) male, c) head, d) thorax, e) wing

**Urophora congrua** Loew, 1862
Material examined: 1 ♂, 2 ♀♀, Gaziantep, Şahinbey, Kürüm, 36° 57’ N, 37° 09’ E, 903 m, 17.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Urophora phalolepidis** Merz and White, 1991
Material examined: 1 ♂, 2 ♀♀, Gaziantep, Şahinbey, Kürüm, 36° 5’ N, 37° 09’ E, 903 m, 17.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

**Urophora terebrans** (Loew, 1850)
Material examined: 1 ♀, 1 ♂, Gaziantep, Şahinbey, Töreli, 36° 53’ N, 37° 21’ E, 670 m, 20.04.2010; 1 ♀, Nizip, 36° 59’ N, 37° 40’ E, 607 m, 23.04.2010; 1 ♀, İslahiye, Türkbağçe, 37° 04’ N, 36° 37’ E, 519 m, 10.05.2010; 1 ♀, Karkamış, 36° 49’ N, 37° 45’ E, 507 m, 03.06.2010; 1 ♀, Araban, Beydili, 37° 30’ N, 37° 39’ E, 910 m, 16.06.2010; 1 ♀, Şahinbey, Cebeler, 37° 02’ N, 37° 16’ E, 946 m, 17.06.2010; Det: Yaran M. (Leg. Yaran, Görmez and Koyuncu).

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