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## Revised checklist of Turkish Agromyzidae (Diptera) fauna of Turkey

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**Abstract:** This study was carried out in the years of 2007 and 2008 in some provinces of Turkey. Specimens of leafminers were collected on cultured and non-cultured plants during 1 year. In this study, 29 new records belonging to 7 genera were found for the Turkish fauna. With this study, the number of leafminer species, which was 136 previously, has been updated to 165 species.

**Key words:** Checklist, new records, Agromyzidae, Turkey

### Türkiye Agromyzidae (Diptera) faunasının gözden geçirilmiş tür listesi

**Özet:** Bu çalışma 2007–2008 yılları arasında Türkiye’de bazı yörelerde yürütülmüştür. Galerisineği örnekleri bir yıl boyunca kültürü yapılan ve kültürü yapılmayan bitkiler üzerinden toplanmıştır. Bu çalışmada Türkiye faunası için yedi cinse ait 29 yeni kayıt bulunmuştur. Bu çalışmayla birlikte önceden 136 türü bilinen galerisineği tür sayısı 165 türe yükselmiştir.

**Anahtar sözcükler:** Kontrol listesi, yeni kayıt, Agromyzidae, Türkiye

### Introduction

Agromyzidae (leafminer flies) is one of the largest fly families, with more than 2790 valid species belonging to 27 genera worldwide (Spencer, 1989; Gu et al., 1991; Pakalniskis, 1992, 1994; Woodley and Janzen, 1995; Pakalniskis, 1996; Sasakawa, 1997; Pakalniskis, 2000; Cerny, 2001, 2005a, 2005b, Sasakawa, 2005; Cerny, 2007a, 2007b; Çıkman and

Sasakawa, 2008). From this family, about 1171 species have been identified in the Palearctic region (Scheirs et al., 1999; Pakalniskis, 2000; Cerny, 2005b; Çıkman and Sasakawa, 2008). Many species were described in the period from the 19th century to the 60s of the last century but only a few isolated cases of damage by Agromyzidae were recorded during this period. Hering (1957) made a special study of all leaf-mining insects in various orders, and produced keys to

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European leafminers arranged by plant genera. However, in his study, Hering (1957) attached too great an importance to the food plant and trivial differences in the leafminers as diagnostic characters, and many new species that he described on these bases have been reduced to synonyms since then. An even more significant advance in clarifying the systematics of the family has been made during the past 45 years with the study of male genitalia. Spencer (1964, 1972, 1973, 1976, 1989, 1990) and Tschirnhaus (1991, 1994, 1999) contributed to the Agromyzidae both in terms of number of taxa and systematics with many studies from 1960 to the present. Adults can be minute, with a wing length of little more than 1 mm. The maximum size known is 6.5 mm. The majority of species are in the wing length range of 2 to 3 mm. Agromyzids are typically phytophagous, with larvae living in the tissues of living plants. Larvae of all the agromyzid species are internal plant feeders with a family specific morphology. Larvae of the most leafminers feed within the leaf parenchyma. Some species are stem-borers or develop in roots, seeds or galls. One genus develops exclusively in the cambium of the young and old trees.

The Agromyzidae are one of the most important fly families in Turkey, because of their pest status, especially on vegetable and ornamental plants in the greenhouses. The Turkish agromyzid fauna is poorly known. One of the reasons is that only few entomologists identified Agromyzidae captured in the Turkish territory (e.g. Giray, 1980; Uygun et al., 1995;

Yabaş et al., 1995; Civelek et al., 2000a, 200b). Another important reason is the difficulties in identification of the Agromyzidae in general. As a result, in the past 15 years, many studies have been carried out. Over the past 70 years some 136 agromyzid species have been identified and reported in Turkey in various publications (Civelek, 2003; Cerny and Merz, 2006; Civelek et al., 2008). It is estimated that the actual Agromyzidae fauna of Turkey is in the range of at least 200–300 species.

The goal of this study was to contribute to the knowledge of the leafminer fauna of Turkey and to clarify which valid leafminer species are in Turkey. Also this study will provide a base for future researches regarding the fauna of leafminer species.

### Materials and methods

Seven geographical regions of Turkey divided into latitudes and longitudes stated by Yiğit and Çolak (1998) were chosen to make the survey economic and practical. The regions are shown in the Figure. The field studies carried out in 6 regions formed 5 longitudes every month between May and October in 2007 and between May and July in 2008. The leafminer species were collected from the selected provinces stated in the Table for each region.

The leafminer specimens were collected from both cultured and non-cultured plants. A GPS (Global Positioning System) was used while the samples were being collected. The adults were obtained by

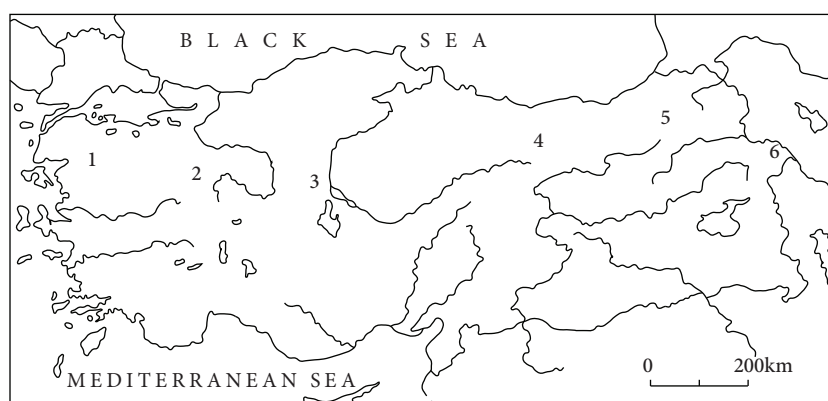


Figure. Six regions of Turkey formed 5 longitudes as stated by Yiğit and Çolak (1998).

Table. Degree of the longitude, number of the region and name of the selected cities.

Degree of the longitude	Number of the region	Name of the selected cities
24- 28	1	Edirne, Tekirdağ, Çanakkale, İzmir
28- 32	2	İzmit, Manisa, Isparta, Antalya
32- 36	3	Kastamonu, Yozgat, Aksaray, Mersin
36- 40	4	Ordu, Kayseri, Malatya, Hatay
40- 44	5	Trabzon, Artvin, Bingöl, Mardin
44- 48	6	Ardahan, Ağrı, Van, Hakkari

sweeping. Since the male genitalia are important characters for identification of the leafminers, slide preparations were made. The following general procedures were applied: the abdomen of each male was boiled in 10% KOH, then transferred into 5% glacial acetic acid for 5 min and subsequently transferred to 96% alcohol for 5 min. Afterwards the abdomen was further dissected under a stereoscopic microscope. The male genitalia were transferred into euparal on a micromount pinned under the individual specimen in order to preserve the material perpetuity (Civelek et al., 2000a). Identifications of the species were made using Spencer (1972, 1973, 1976, 1989, 1990) and Cerny (2007a, 2007b).

## Results

In this study, 29 newly recorded species were added to the Turkish leafminer fauna. Representative specimens were deposited at the laboratories in the Science and Arts Faculty, Biology Department, Entomology Laboratory, Muğla, and Harran University, Agriculture Faculty, Plant Protection Department, Şanlıurfa, Turkey.

The taxa are presented alphabetically with their distributions in Turkey.

### Subfamily 1. Agromyzinae

Genus 1. *Agromyza* Fallén, 1810

*Agromyza abiens* Zetterstedt, 1848

Mardin (Çıkman and Civelek, 2005)

*Agromyza albipennis* Meigen, 1830

Şanlıurfa (Çıkman and Uygun, 2003)

*Agromyza albitarsis* Meigen, 1830

İzmir (Giray, 1980); Mardin (Çıkman and Civelek, 2005)

*Agromyza ambigua* Fallén, 1823

Aydın (new record)

*Agromyza anderssoni* Spencer, 1976

Kırklareli (European part of Turkey, new record)

*Agromyza anthracina* Meigen, 1830

Erzurum (Civelek et al., 2007)

*Agromyza apfelbecki* Strobl, 1902

İzmir (Giray, 1980)

*Agromyza bromi* Spencer, 1966

Erzurum (Civelek et al., 2007)

*Agromyza felleri* Hering, 1941

Diyarbakır, Mardin (Çıkman and Sasakawa, 2005)

*Agromyza flavipennis* Hendel, 1920

Isparta (new record)

*Agromyza frontella* (Rondani, 1875)

İzmir (Civelek et al., 2000a).

*Agromyza graminicola* Hendel, 1931

Erzurum (Civelek et al., 2007)

*Agromyza hiemalis* Becker, 1908

İzmir (Giray, 1980); Adana and Hatay (Uygun et al., 1995)

*Agromyza idaeiana* Hardy, 1853

Artvin (Civelek et al., 2007)

*Agromyza intermittens* Becker, 1907

- İzmir (Deeming and Civelek, 1997)  
*Agromyza marionae* Griffiths, 1963  
 Hatay (new record)  
*Agromyza megalopsis* Hering, 1933  
 Turkey (Cerny and Merz, 2006)  
*Agromyza myosotidis* Kaltenbach, 1864  
 Isparta (new record)  
*Agromyza nana* Meigen, 1830  
 İzmir (Deeming and Civelek, 1997)  
*Agromyza nigrescens* Hendel, 1920  
 Turkey (Cerny and Merz, 2006 )  
*Agromyza nigripes* Meigen, 1830  
 Turkey (Cerny and Merz, 2006)  
*Agromyza phylloposthia* Sasakawa, 2008  
 Adıyaman (Çıkman and Sasakawa, 2008)  
*Agromyza pittodes* Hendel, 1931  
 Muğla (new record)  
*Agromyza prespana* Spencer, 1957  
 Turkey (Cerny and Merz, 2006)  
*Agromyza reptans* Fallén, 1823  
 Turkey (Hering, 1931-1936); Şanlıurfa (Çıkman and Uygun, 2003)  
*Agromyza rondensis* Strobl, 1900  
 İzmir (Deeming and Civelek, 1997); Şanlıurfa (Çıkman and Uygun, 2003)  
*Agromyza trebinjensis* Strobl, 1900  
 İzmir (Giray, 1980)  
*Agromyza vicifoliae* Hering, 1932  
 Mardin (Çıkman and Sasakawa, 2005).
- Genus 2. **Hexomyza** Enderlein, 1936  
*Hexomyza simplex* (Loew 1869)  
 Kırklareli (European part of Turkey, new record)
- Genus 3. **Japanagromyza** Sasakawa, 1958  
*Japanagromyza salicifolii* (Collin, 1911)  
 Turkey (Hering, 1957); İzmir (Giray, 1980)
- Genus 4. **Melanagromyza** Hendel, 1920  
*Melanagromyza aeneoventris* (Fallén, 1823)  
 Adıyaman (Çıkman and Sasakawa, 2006)  
*Melanagromyza cunctans* (Meigen, 1830)  
 Muğla (Civelek, 2003)  
*Melanagromyza pubescens* Hendel, 1923  
 Adıyaman (Çıkman and Sasakawa, 2006)  
*Melanagromyza tripolii* Spencer, 1957  
 Elazığ (Civelek et al., 2007)  
*Melanagromyza vignalis* Spencer, 1959  
 Şanlıurfa (Çıkman and Uygun, 2003)
- Genus 5. **Ophiomyia** Braschnikov, 1897  
*Ophiomyia beckeri* (Hendel, 1923)  
 Mardin (Çıkman and Sasakawa, 2005)  
*Ophiomyia cunctata* (Hendel, 1920)  
 İzmir (Civelek et al., 2000a); Şanlıurfa (Çıkman and Uygun, 2003)  
*Ophiomyia curvipalpis* (Zetterstedt, 1848)  
 İzmir (Civelek et al., 2000a)  
*Ophiomyia delphinii* Hendel, 1928  
 Muğla (Cerny and Merz, 2007)  
*Ophiomyia galii* Hering, 1937  
 Muğla (Cerny and Merz, 2007)  
*Ophiomyia inaequabilis* (Hendel, 1931)  
 Turkey (Hendel, 1931-1936); İzmir (Civelek et al., 2000a)  
*Ophiomyia labiatarum* Hering, 1937  
 Turkey (Cerny and Merz, 2006)  
*Ophiomyia maura* (Meigen, 1838)  
 Çanakkale (Hepdurgun et al., 2007)  
*Ophiomyia memorabilis* Spencer, 1974  
 Turkey (Cerny and Merz, 2006)  
*Ophiomyia orbiculata* (Hendel, 1931)  
 İzmir (Deeming and Civelek, 1997)  
*Ophiomyia phaseoli* (Tryon, 1895)  
 Adana, Hatay (Civelek and Ulusoy, 2000)  
*Ophiomyia pinguis* (Fallén, 1820)  
 Turkey (Hendel, 1931-1936); Şanlıurfa (Çıkman and Uygun, 2003)

*Ophiomyia pulicaria* (Meigen, 1830)

Muğla (Civelek, 2002)

*Ophiomyia submaura* Hering, 1926

Turkey (Hendel, 1931-1936).

## Subfamily 2. Phytomyzinae

Genus 1. *Amauromyza* Hendel, 1931

Subgenus 1. *Amauromyza* Hendel, 1931

*Amauromyza* (*Amauromyza*) *morionella*  
(Zetterstedt, 1848)

İzmir (Giray, 1980).

Subgenus 2. *Cephalomyza* Hendel, 1931

*Amauromyza* (*Cephalomyza*) *flavifrons* (Meigen,  
1830)

İzmir (Civelek et al., 2000b).

*Amauromyza* (*Cephalomyza*) *luteiceps* (Hendel,  
1920)

Muğla (Civelek et al., 2000b)

Genus 2. *Aulagromyza* Enderlein, 1936

*Aulagromyza buhri* (de Meijere, 1938)

Muğla (Civelek, 2002).

*Aulagromyza hamata* (Hendel, 1932)

İzmir (Giray, 1980).

*Aulagromyza heringii* (Hendel, 1920)

Muğla (Giray, 1980)

*Aulagromyza orphanana* (Hendel, 1920)

İzmir (Civelek et al., 2000).

*Aulagromyza populi* (Kaltenbach, 1864)

Isparta, İzmir (Giray, 1980)

*Aulagromyza trivittata* (Loew, 1873)

Balıkesir (Hepdurgun et al., 2007)

Genus 3. *Calycomyza* Hendel, 1931

*Calycomyza humeralis* (von Roser, 1840)

İzmir (Civelek et al., 2000a); Şanlıurfa (Çıkman  
and Uygun, 2003); Mardin (Çıkman and Civelek,  
2005)

Genus 4. *Cerodontha* Rondani, 1861

Subgenus 1. *Butomomyza* Nowakowski, 1967

*Cerodontha* (*Butomomyza*) *angulata* (Loew, 1869)

Turkey: (Hendel, 1931-1936)

*Cerodontha* (*Butomomyza*) *pseuderrans* (Hendel,  
1931)

Rize (new record)

*Cerodontha* (*Butomomyza*) *scutellaris* (von Roser,  
1840)

Şanlıurfa (new record)

Subgenus 2. *Cerodontha* Rondani, 1861

*Cerodontha* (*Cerodontha*) *denticornis* (Panzer,  
1806)

Turkey (Hendel, 1931-1936); İzmir (Civelek,  
1998); Şanlıurfa (Çıkman and Uygun, 2003);  
Diyarbakır and Mardin (Çıkman and Civelek, 2005)

*Cerodontha* (*Cerodontha*) *fulvipes* (Meigen, 1830)

Artvin, Rize, Trabzon (new record)

Subgenus 3. *Dizygomyza* Hendel, 1920

*Cerodontha* (*Dizygomyza*) *bimaculata* (Meigen,  
1830)

Isparta (new record)

Subgenus 4. *Poemyza* Hendel, 1931

*Cerodontha* (*Poemyza*) *imbuta* (Meigen, 1838)

Rize (new record)

*Cerodontha* (*Poemyza*) *incisa* (Meigen, 1830)

Mersin (new record)

*Cerodontha* (*Poemyza*) *lateralis* (Macquart, 1835)

Turkey (Cerny and Merz, 2006)

*Cerodontha* (*Poemyza*) *pygmaea* (Meigen, 1830)

Turkey (Cerny and Merz, 2006)

Genus 5. *Chromatomyia* Hardy, 1849

*Chromatomyia ciliata* (Hendel, 1935)

Erzurum (Civelek et al., 2007)

*Chromatomyia fuscula* (Zetterstedt, 1838)

- Kahramanmaraş (Mart et al., 2005)  
*Chromatomyia horticola* (Goureau, 1851)  
 Adana, İstanbul, İzmir, Muğla (Giray, 1980);  
 Adana and Hatay (Uygun et al., 1995); Şanlıurfa  
 (Çıkman and Uygun, 2003); Ankara (Gençer, 2004);  
 Diyarbakır and Mardin (Çıkman and Civelek, 2005)  
*Chromatomyia luzulae* (Hering, 1924)  
 Rize (Civelek et al., 2007)  
*Chromatomyia milii* (Kaltenbach, 1864)  
 İzmir (Civelek et al., 2000a)  
*Chromatomyia nigra* (Meigen, 1830)  
 Elazığ (Civelek et al., 2007)  
*Chromatomyia scolopendri* (Robineau-Desvoidy,  
 1851)  
 Muğla (Civelek, 2002).  
*Chromatomyia succisae* (Hering, 1922)  
 Turkey (Cerny and Merz, 2006).
- Genus 6. ***Galiomyza*** Spencer, 1981  
*Galiomyza violiphaga* (Hendel, 1932)  
 Çanakkale (Hepdurgun et al., 2007)
- Genus 7. ***Liriomyza*** Mik, 1894  
*Liriomyza alyssi* (Hering, 1960)  
 Turkey (Cerny and Merz, 2006)  
*Liriomyza amarellae* Hering, 1963  
 Çanakkale (Hepdurgun et al., 2007)  
*Liriomyza amoena* (Meigen, 1830)  
 İzmir (Giray, 1980)  
*Liriomyza balcanica* (Strobl, 1900)  
 İzmir (Civelek et al., 2000a).  
*Liriomyza brassicae* (Riley, 1884)  
 Antalya, İzmir (Giray, 1980).  
*Liriomyza bryoniae* (Kaltenbach, 1858)  
 İzmir (Giray, 1980); Adana and Hatay (Uygun et  
 al., 1995).  
*Liriomyza buhri* Hering, 1937  
 Antalya (new record)
- Liriomyza cannabis* Hendel, 1931  
 İzmir, Kastamonu (Giray, 1980)  
*Liriomyza cardariae* Sasakawa, 2008  
 Adıyaman (Çıkman and Sasakawa, 2008)  
*Liriomyza centaureae* Hering, 1927  
 İzmir (Civelek et al., 2000a)  
*Liriomyza cepae* (Hering, 1927)  
 İzmir (Giray, 1980)  
*Liriomyza cicerina* (Rondani, 1875)  
 İzmir (Lodos, 1962); Adana and Hatay (Uygun et  
 al., 1995); Şanlıurfa (Çıkman and Uygun, 2003).  
*Liriomyza congesta* (Becker, 1903)  
 İzmir, Manisa (Giray, 1980) Şanlıurfa (Çıkman  
 and Uygun, 2003); Mardin (Çıkman and Civelek,  
 2005)  
*Liriomyza dracunculi* Hering, 1932  
 Rize (Civelek et al., 2007)  
*Liriomyza eupatorii* (Kaltenbach, 1873)  
 Mersin (new record)  
*Liriomyza euphorbiae* Martinez, 1999  
 Isparta (Martinez and Sobhian, 1999)  
*Liriomyza flaveola* (Fallén 1823)  
 Muğla (Civelek, 2002)  
*Liriomyza freyella* Spencer, 1976  
 Kırklareli (European part of Turkey, new record)  
*Liriomyza hieracivora* Spencer, 1971  
 Şanlıurfa (Çıkman and Uygun, 2003)  
*Liriomyza huidobrensis* (Blanchard, 1926)  
 Adana, İzmir (Yabaş et al., 1995); Aydın (Yıldırım,  
 2002)  
*Liriomyza orbona* (Meigen, 1830)  
 İzmir (Deeming and Civelek, 1997)  
*Liriomyza pascuum* (Meigen, 1838)  
 Muğla (Civelek, 2004)  
*Liriomyza pedestris* Hendel, 1931  
 Turkey (Cerny and Merz, 2006 )  
*Liriomyza pusilla* (Meigen, 1830)

Turkey (Hendel, 1931–1936)  
*Liriomyza sativae* Blanchard, 1938  
 Muğla (Civelek, 2002); Diyarbakır (Çıkman and Civelek, 2005)

*Liriomyza strigata* (Meigen, 1830)

Denizli, İzmir (Giray, 1980); Adana and Hatay (Uygun et al., 1995); Şanlıurfa (Çıkman and Uygun, 2003); Mardin (Çıkman and Civelek, 2005)

*Liriomyza trifolii* (Burgess in Comstock, 1880)

Adana, Hatay (Uygun et al., 1995); Şanlıurfa (Çıkman and Uygun, 2003); Aydın (Yıldırım, 2002); Muğla (Civelek and Weintraub, 2003); Ankara (Gençer, 2004); Diyarbakır and Mardin (Çıkman and Civelek, 2005)

*Liriomyza virgula* Frey, 1946

Mersin (new record)

Genus 8. ***Metopomyza*** Enderlein, 1936

*Metopomyza scutellata* (Fallén, 1823)

Mersin (new record)

*Metopomyza xanthaspis* (Loew, 1858)

Mersin (new record)

Genus 9. ***Napomyza*** Westwood, 1840

*Napomyza bellidis* Griffiths, 1967

Hatay (new record)

*Napomyza carotae* Spencer, 1966

Erzurum (Civelek et al., 2007).

*Napomyza cichorii* Spencer, 1966

Isparta (new record)

*Napomyza elegans* (Meigen, 1830)

Mardin (Çıkman and Civelek, 2005).

*Napomyza lateralis* (Fallén, 1823)

İzmir (Civelek et al., 2000a); Diyarbakır (Çıkman and Civelek, 2005)

Genus 10. ***Phytoliriomyza*** Hendel, 1931

*Phytoliriomyza arctica* (Lundbeck, 1901)

Turkey (Spencer, 1964); İzmir (Civelek et al., 2000a)

*Phytoliriomyza dorsata* (Siebke, 1863)

Diyarbakır (Çıkman and Civelek, 2005)

*Phytoliriomyza oasis* (Becker, 1907)

Turkey (Cerny and Merz, 2006)

*Phytoliriomyza perpusilla* (Meigen, 1830)

Kahramanmaraş (Mart et al., 2005)

Genus 11. ***Phytomyza*** Fallén, 1810

*Phytomyza aconitophila* Hendel, 1927

Muğla (Civelek, 2004)

*Phytomyza affinis* Fallén, 1823

Turkey (Bodenheimer, 1958); Şanlıurfa (Çıkman and Uygun, 2003)

*Phytomyza albipennis* (Fallén, 1823)

Muğla (Civelek et al., 2007)

*Phytomyza angelicae* Kaltenbach, 1872

Muğla (Civelek, 2002)

*Phytomyza astrantiae* Hendel, 1924

Trabzon (Civelek et al., 2007)

*Phytomyza aquilonia* Frey, 1946

Diyarbakır (Çıkman and Civelek, 2005)

*Phytomyza aurei* Hering, 1931

Kırklareli (European part of Turkey, new record)

*Phytomyza brevifacies* Hendel, 1934

Rize (Civelek et al., 2007)

*Phytomyza cecidonomia* Hering, 1937

Muğla (new record)

*Phytomyza chelonei* Spencer, 1969

Şanlıurfa (Çıkman and Uygun, 2003)

*Phytomyza cirsii* Hendel, 1923

Turkey (Hering, 1957)

*Phytomyza clematidis* Kaltenbach, 1859

İzmir (Civelek et al., 2000a).

*Phytomyza continua* Hendel, 1920

Turkey (Cerny and Merz, 2006).

*Phytomyza conyzae* Hering, 1920



- Muğla (Civelek, 2002)  
*Phytomyza crassiseta* Zetterstedt, 1860  
 Bursa, Çanakkale, İzmit, Muğla (new record)  
*Phytomyza fallaciosa* Brischke, 1880  
 Kahramanmaraş (Mart et al., 2005).  
*Phytomyza ferulae* Hering, 1927  
 İzmir (Giray, 1980)  
*Phytomyza flavicornis* Fallén, 1823  
 Turkey (Cerny and Merz, 2006).  
*Phytomyza geminata* Sasakawa, 2008  
 Adıyaman (Çıkman and Sasakawa, 2008)  
*Phytomyza glabra* Hendel, 1935  
 Erzurum (Civelek et al., 2007).  
*Phytomyza gymnostoma* Loew, 1858  
 İzmir (Civelek et al., 2000a)  
*Phytomyza kaltenbachi* Hendel, 1922  
 Balıkesir, İzmir, Manisa (Giray, 1980)  
*Phytomyza lappae* Goureau, 1851  
 Ankara (Gençer, 2004)  
*Phytomyza nigrītula* Zetterstedt, 1838  
 Burdur (Civelek et al., 2007)  
*Phytomyza origani* Hering, 1931  
 Çanakkale (new record)  
*Phytomyza orobanchia* Kaltenbach, 1864  
 Balıkesir, Bursa, Manisa (Civelek and Demirkan, 1998); Şanlıurfa (Çıkman and Uygun, 2003);  
 Diyarbakır, Mardin (Çıkman and Civelek, 2005)  
*Phytomyza petoei* Hering, 1924  
 İzmir (Civelek et al., 2000a)  
*Phytomyza phillyreae* Hering in Buhr, 1930  
 Turkey (Cerny and Merz, 2006)  
*Phytomyza plantaginis* Robineau-Desvoidy, 1851  
 İzmir (Civelek et al., 2000a); Mardin (Çıkman and Civelek, 2005)  
*Phytomyza podagrariae* Hering, 1954  
 Çanakkale (new record)  
*Phytomyza pubicornis* Hendel, 1920  
 Isparta (new record)  
*Phytomyza ranunculi* (Schrank, 1803)  
 İzmir (Deeming and Civelek, 1997)  
*Phytomyza rostrata* Hering, 1934  
 İzmit (new record)  
*Phytomyza rufescens* von Roser, 1840  
 İzmir (Civelek et al., 2000a)  
*Phytomyza rufipes* Meigen, 1830  
 İzmir (Civelek et al., 2000a); Mardin (Çıkman and Civelek, 2005)  
*Phytomyza sii* Hering, 1930  
 Kırklareli (European part of Turkey, new record)  
*Phytomyza spoliata* Strobl, 1906  
 Turkey (Hering, 1957)  
*Phytomyza socia* Brischke, 1880  
 Diyarbakır (Çıkman and Sasakawa, 2005)  
*Phytomyza tenella* Meigen, 1830  
 İzmir (Civelek et al., 2000a)  
*Phytomyza tetrasticha* Hendel, 1927  
 İzmir (Giray, 1980)  
*Phytomyza thysselinivora* Hering, 1924  
 Muğla (Civelek, 2002)  
 Genus 12. ***Pseudonapomyza*** Hendel, 1920  
*Pseudonapomyza atra* (Meigen, 1830)  
 Şanlıurfa (Çıkman and Uygun, 2003)  
*Pseudonapomyza europaea* Spencer, 1973  
 Turkey (Cerny, 2005b)  
*Pseudonapomyza hispanica* Spencer, 1973  
 İzmir (Civelek et al., 2000a)  
*Pseudonapomyza pyriformis* Sasakawa, 2008  
 Adıyaman (Çıkman and Sasakawa, 2008)  
*Pseudonapomyza spicata* (Malloch, 1914)  
 Şanlıurfa (Çıkman and Uygun, 2003)  
*Pseudonapomyza spinosa* Spencer, 1973  
 Şanlıurfa (Çıkman and Uygun, 2003)  
*Pseudonapomyza strobliana* Spencer, 1973  
 Turkey (Cerny, 2005b)

## Conclusion

With this study, the number of leafminer species, which was 136 previously, has been updated to 165 species.

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