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## Notes and contributions on the flora of Melendiz Mountains and its surroundings (Niğde, Turkey)

### Abstract

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This research focuses on the flora of Melendiz Mountains and its surroundings, situated in the province of Niğde in Central Anatolia, entirely within the Irano-Turanian phytogeographic region. In the area, 498 taxa belonging to 58 families, and 244 genera were determined. The families with the most taxa in the research area are *Asteraceae* (67 taxa), *Fabaceae* (51 taxa) *Poaceae* and *Lamiaceae* (41 taxa), *Caryophyllaceae* (38 taxa), *Brassicaceae* (23 taxa), *Apiaceae* (20 taxa), *Boraginaceae* (21 taxa), *Rosaceae* (16 taxa). Concerning the number of species, the major genera in this region are as follows: *Astragalus* (11), *Veronica* (10), *Silene* (9), *Trifolium* (9), *Centaurea* (7), *Ranunculus* (7), *Minuartia* (7), *Lathyrus* (7). According to the life forms, hemicryptophytes come first with a rate of 45.58 % in the region, followed by therophytes (27.71 %), cryptophytes (10.84 %), chamaephytes (10.04 %), phanerophytes (4.81 %) and vascular parasites (1.00 %). The distribution rates of phytogeographic elements are as follows: Irano-Turanian 24.09 %, Mediterranean 9.23 %, Euro-Siberian 4.61 % and others 62.04 %. The number of endemic taxa is 73 (the endemism rate is 14.6 %) in the study area. The 22 taxa are new records for square B5 and 1 taxon is for square C5.

*Key words:* vascular plants, highland, Central Anatolia.

### Introduction

Turkey has a rich floristic composition due to of its geographical location. The altitudinal variation, different types of climate, geological, geomorphological diversity and edaphic factors and being situated at the junction of three phytogeographical regions (Euro-Siberian, Irano-Turanian and Mediterranean) allow to be high plant diversity. As a result of these reasons, there are approximately 11700 vascular plants according to the latest information and various vegetation types in Turkey (Güner & al. 2000; Kurt & al. 2006). Nearly 3649 of these plants are endemic to Turkey. Hence, the endemism ratio in Turkey is about 32 % (Güner & al. 2012) which is more than other Mediterranean countries such as Spain (18.6 %), Greece (14.9 %) and France (2.9 %) (Avcı 2005).

The main aim of this research is to contribute to the flora of Melendiz Mountains and its surroundings, to determine rare and endemic plants of the research area and to mention about the vegetation of the research area briefly as well. There have been some studies on the flora of Melendiz Mountains (Eyce 1987; Eyce & Ocakverdi 1987). But this research comprises a larger area than the area of these studies. Apart from that there are some surveys that has been done near the research area (Başköse & Dural 2011; Baysal 2003; Martin & Aydoğdu 2005). However, it is preferred comparing floristic composition of the studies that have the similar altitude with the research area (Bağcı 1998; Başköse & Dural 2011; Bozok & Aksoy 2013; Hamzaoğlu 1996; Ünal & Ocakverdi 1991; Vural & Aytaç 2005) due to floristic composition that depends on altitude relatively.

The study area is situated in province of Niğde in Central Anatolia and Irano-Turanian phytogeographic region. While the great part is located in B5, the southern part of the area is in C5 of the grid system (Fig. 1, Fig. 2). The summit of Melendiz Mountain is 2963 m, Keçiboyduran Mountain that lies westwards of the summit is 2727 m. Göllüdağ lying northwards of the summit is 2172 m (Eyce & Ocakverdi 1987). The plains whose altitudes change between 1100 - 1400 m enclose these mountains in the area. The study area situated in south eastern of Central Anatolia is the most widely distributed volcanic area in Central Anatolia Region (Altın 2008). The volcanism in the region began with reaching of the magma to the earth surface by raising of Taurus Mountains and tectonic movements in the Middle Miocene, continued until Quaternary (Ercan 1985). The geological structure of the area is composed of andesite, basalt, tuff and agglomerate with volcanoclastic characteristics (Anonymous 2009; Beekman 1966).

*Vegetation* - Steppe vegetation has replaced forests in Central Anatolia as a result of cultural and agricultural development of human over time. Therefore, Central Anatolian steppe is an anthropogenic one and a secondary type of vegetation due to deforestation of the primary vegetation of Mediterranean area (Akman & al. 1994). Owing to the destruction of the natural vegetation around settlements in the research area completely and dry forests being sensitive according to destruction factors, these antropogenic steppe species have invaded these sylvatic lands.

Most part of the research area is covered by this type of steppe vegetation which is characterised by the species such as *Astragalus angustifolius*, *A. microcephalus*, *A. acmophyllus*, *Thymus sipyleus*, *Salvia absconditiflora*, *Festuca valesiaca*, *Thymus sipyleus*, *Eremogone ledebouriana*, *Bromus tomentellus*, *Dactylis glomerata*, *Stipa pulcherrima* and *Poa bulbosa*. Also, these species represent the high mountain vegetation of Central Anatolia.

Forest - steppes are found at between 1500 -2000 m altitudes in the south - western portion of Melendiz Mountain, between 1400 -1850 m in the western and north -western part of Keçiboyduran Mountain and between 1600 -1820 m on environs of Göllüdağ in the study area. Swidden in spite of inconvenient soils for agriculture and intensive-irregular grazing causes destruction and even disappearance of forest -steppes. Residual forests composed of oaks (*Quercus pubescens*, *Q. trojana*, *Q. cerris*, *Q. vulcanica* and *Quercus ithaburensis* subsp. *macrolepis*), *Juniperus oxycedrus* and wild fruit trees (*Pyrus elaeagrifolia* and *Prunus divaricata*) have moved to unattainable stony high altitudes due to expanded cultivated areas (Altın 2008). Also, underbrush species of oak forests having open tree canopy are similar with the steppe species in the research area. Akman (1974) is stated stages of regressive succession in Central Anatolia. According to this, *Quercus pubescens* forests are a subclimax in Central Anatolia

and it is followed by sparse shrub stage composed of *Juniperus oxycedrus*. *Astragalus microcephalus*, *A. angustifolius* followed by *Festuca valesiaca* and *Thymus sipyleus* are found at the last stage. Two major plant species a sod forming grass *Festuca valesiaca* and a prostrate shrub *T. sipyleus* are found in the research area except spinous *Astragalus* species. These two species being most grazing-increaser species may be considered indicators of rangeland degradation as they are exceptionally persistent (Fırıncioğlu & al. 2009).

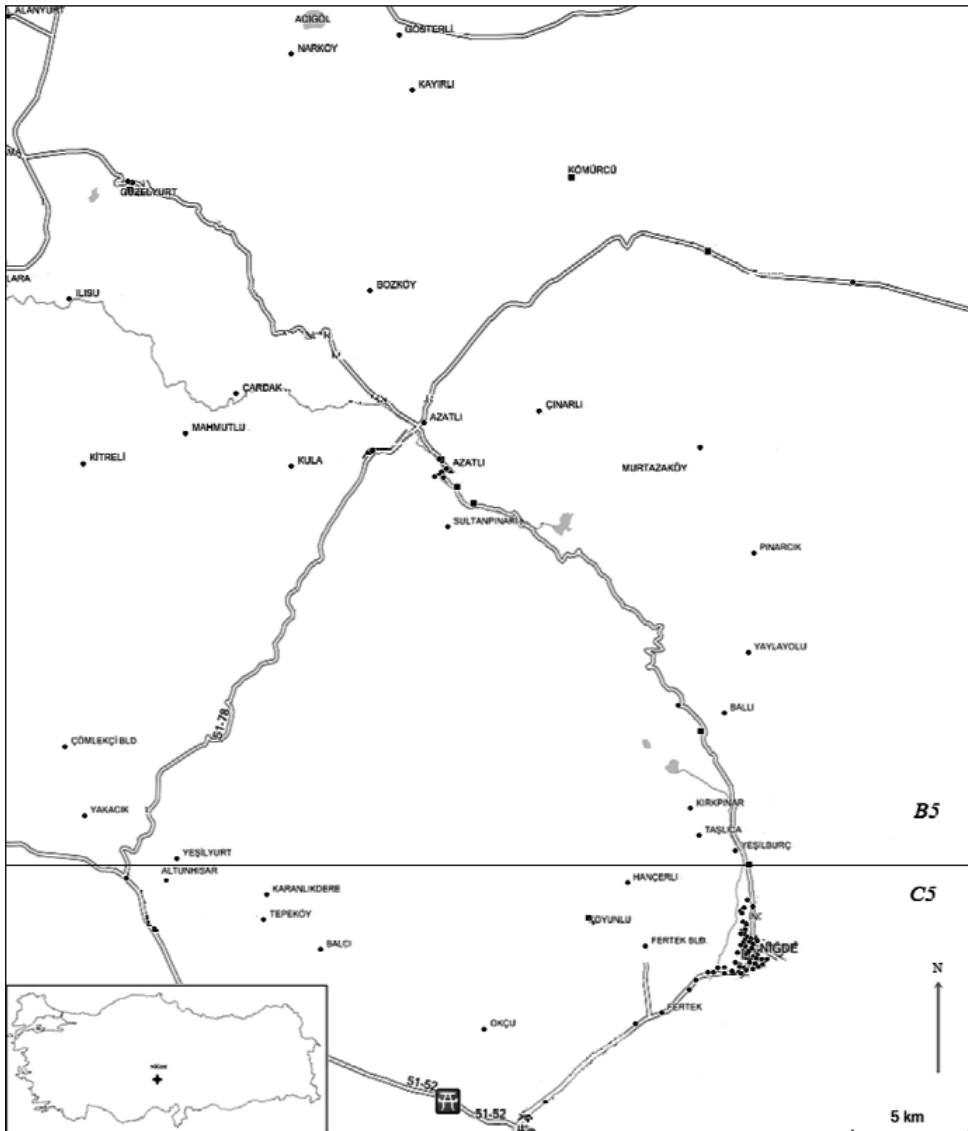


Fig. 1. Map of the study area.

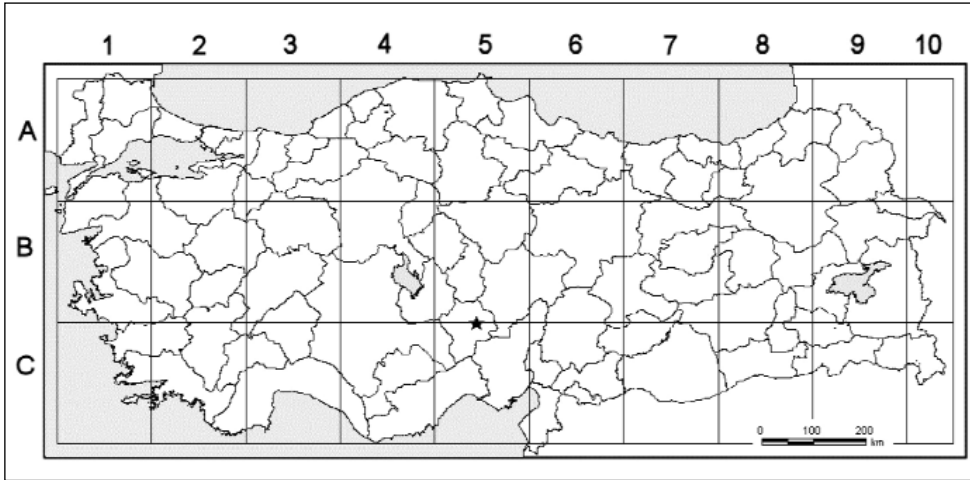


Fig. 2 Grid system of Davis (1965-1985).

*Climate* - A cold semiarid Mediterranean climate prevails in the research area. The temperature and precipitation of the mountain changes gradually from low altitudes to the summit. According to Emberger, the precipitation -temperature coefficient ( $Q_2$ ) is 34 (Akman 1999). Annual mean temperature is 11.1 °C. The maximum mean temperature (M) is 29.5 °C in August. The minimum mean temperature (m) is -4.8 °C in January. Annual rainfall is about 334.6 mm and the seasonal precipitation regime is spring, winter, autumn and summer (Si., Wi., Au., Sp.). The ombrothermic diagram shows arid and humid periods (Fig. 3).

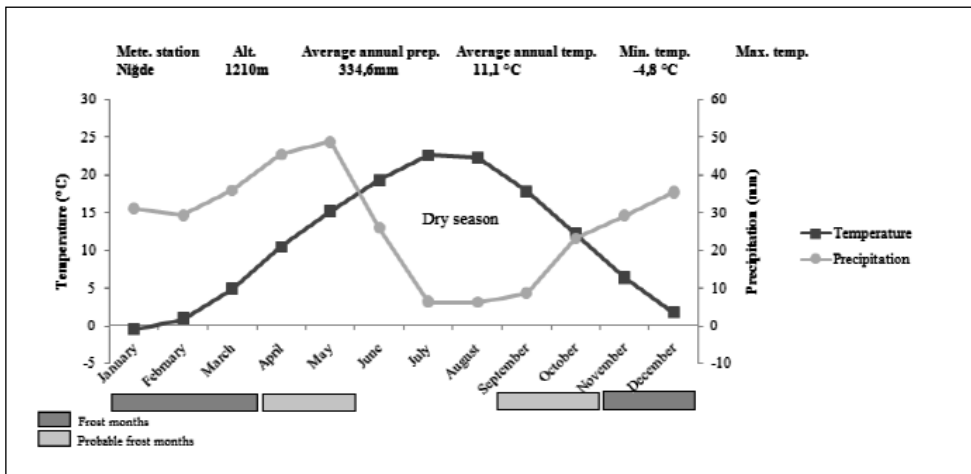


Fig. 3 Ombrothermic diagram of Niğde.

## Materials and Methods

The material for this study consists of nearly 880 vascular plant specimens collected from the Melendiz Mountains and its surroundings between 2010 and 2013. All collected plant taxa during the study are kept at the Herbarium of Ankara University, Faculty of Sciences, Department of Biology (ANK). These specimens were identified according to the *Flora of Turkey and The East Aegean Islands* (Davis 1965–1985; Davis & al. 1988; Güner & al. 2000) and with the help of different publications (Eyce & Ocakverdi 1987; Eyce 1987; Savran & al. 1997; Bağcı & al. 1998; Savran & al. 1999; Orcan & Yaylıoğlu 2000; Başköse & Dural 2011). The endemic species were categorised according to IUCN Red Data categories (IUCN 2001; Ekim & al. 2000). The data of this study were compared with other studies carried out in nearby regions (Bozok & Aksoy 2013; Vural & Aytaç 2005; Başköse & Dural 2011; Bağcı 1998; Hamzaoğlu 1996; Ünal & Ocakverdi 1991). The new combinations, status and synonyms of identified taxa have been checked by “A checklist of the Flora of Turkey (Vascular Plants)” (Güner & al. 2012).

The list of plants is set out according to APGIII (Reveal & Chase 2011; Haston & al. 2009) and the families are ordered in according to the *Flora of Turkey and The East Aegean Islands* (Davis 1965-1985; Davis & al. 1988; Güner & al. 2000). Genera, species and infraspecific taxa are arranged in alphabetical order. The details such as family name, species name, collector number, endemism, the phytogeographic region element, life forms, the author(s) and list of localities included name of the district, coordinates, altitude, collection date. Habitat of the plant are given in the floristic list of the article.

The following abbreviations are used in the text: **Euro -Sib.:** Euro -Siberian, **Ir. -Tur.:** Irano-Turanian, **Medit.:** Mediterranean, **E. Medit.:** East Mediterranean, **Eux.:** Euxine, **End.:** Endemic, **subsp.:** subspecies, **var.:** variety, **m:** meter, **VU:** Vulnerable; **LC:** Least concern, **NT:** Near threatened, **S:** station, **Th.:** Therophyte, **Ch.:** Chamaephyte, **Hcr.:** Hemicryptophyte, **Crp.:** Cryptophyte, **Ph.:** Phanerophyte, **Vp.:** Vascular parasite.

## List of localities

- S1.** B5 on the slopes of Sıralıkaya in Sultanpınarı, 38° 06' 35" N - 34° 31' 39" E, 2064 m, 06.08.2011
- S2.** B5 on the northern slopes of Narlıgöl, 38° 20' 13" N - 34° 27' 30", 1384 m, 14.04.2011
- S3.** C5 on the south - western slopes of Kızıltepe Hill in Tepeköy, 37° 58' 36"N - 34° 26' 44" E, 1495 m, 16.07.2012
- S4.** C5 on the upper slopes of Beşkat, Harmanseki Hills in Balcı village, 37° 57' 04" N - 34° 29' 03" E, 1621 m, 07.07.2013
- S5.** C5 Kızıltepe Hill in Tepeköy, 37° 59' 03" N - 34° 26' 15" E, 1410 m, 16.06.2011
- S6.** C5 on the northern slopes of Tepeköy, 37° 59' 09" N - 34° 25' 31" E, 1404 m, 16.05.2010
- S7.** B5 on the eastern slopes of Ulukışla village, 38° 03' 23" N - 34° 17' 21" E, 1318 m, 22.05.2011
- S8.** C5 on the southern slopes of Tepeköy, 37° 58' 28" N - 34° 25' 58" E, 1307 m, 16.05.2010

- S9.** C5 on the southern slopes of Karanlıkdere village, 37° 59' 45" N - 34° 26' 03" E, 1507 m, 16.05.2010
- S10.** B5 on the north - eastern slopes of Sultanpınarı village (exit of upland pathway), 38° 07' 55" N - 34° 31' 38" E, 1898 m, 23.07.2012
- S11.** B5 around the base station, south - eastern slopes of Güreşen Hill, 38° 05' 58" N - 34° 35' 54" E, 2273 m, 05.08.2012
- S12.** B5 on the south - western slopes between Çiftlik and Yeşilyurt, 38° 07' 13" N - 34° 26' 53" E, 1842 m, 22.05.2011
- S13.** B5 above Asmasız village, 38° 08' 29" N - 34° 29' 60" E, 1709 m, 15.05.2010
- S14.** B5 between Ulukışla and Kitreli village, 38° 05' 02" N - 34° 17' 32" E, 1589 m, 22.05.2011
- S15.** C5 on the south - western slopes of Fesleğen village, 37° 59' 19" N - 34° 32' 52" E, 1688 m, 16.06.2011
- S16.** B5 around memorial forest in Yakacık village, 38° 06' 29" N - 34° 22' 47" E, 2179 m, 19.05.2012
- S17.** B5 on the eastern slopes of between Kitreli and Ulukışla villages, 38° 08' 51" N - 34° 19' 54" E, 1718 m, 15.04.2011
- S18.** B5 on the northern slopes of Göllüdağ, 38° 16' 15" N - 34° 33' 51" E, 1684 m, 16.07.2011
- S19.** B5 on the upper slopes of Mahmutlu village, 38° 10' 46" N - 34° 23' 18" E, 1675 m, 11.07.2010
- S20.** B5 on the western slopes of between Ulukışla - Kitreli, 38° 08' 07" N - 34° 17' 04" E, 1766 m, 15.04.2011
- S21.** B5 Kırlandı Valley nearby Karanlıkdere village (after Amberkaya), 38° 02' 07" N - 34° 28' 49" E, 2020 m, 12.06.2013
- S22.** C5 on the upper slopes of Karanlıkdere village, 37° 59' 49" N - 34° 26' 15" E, 1555 m, 16.05.2010
- S23.** B5 at fieldsides in Mahmutlu village, 38° 10' 35" N - 34° 23' 12" E, 1698 m, 11.07.2010
- S24.** B5 oak forest in Murtazaköy, 38° 13' 51" N - 34° 33' 09" E, 1633 m, 05.06.2011
- S25.** B5 on the northern slopes of Göllüdağ, 38° 16' 04" N - 34° 33' 33" E, 1826 m, 16.07.2011
- S26.** B5 on the north - western slopes of Kırlandı Valley nearby Karanlıkdere village (after Amberkaya), 38° 01' 43" N - 34° 28' 23" E, 1918 m, 01.06.2013
- S27.** B5 on the western slopes of Katlar Hill in Sultanpınarı (the end of the stony pathway), 38° 06' 19" N - 34° 31' 36" E, 2137 m, 22.07.2012
- S28.** B5 on the south - eastern slopes of Kaletepe - Kurşunlu Hill in Asmasız village, 38° 08' 09" N - 34° 29' 26" E, 1955 m, 21.06.2012
- S29.** B5 on the upper slopes of Asmasız village, 38° 08' 29" N - 34° 29' 59" E, 1709 m, 15.05.2010
- S30.** B5 on the north - western slopes around Ketençimen in Murtazaköy, 38° 06' 04" N - 34° 35' 19", 2230 m, 04.08.2012
- S31.** B5 on the northern slopes of Kaletepe - Kurşunlu Hill in Asmasız village, 38° 08' 27" N - 34° 29' 57" E, 1723 m, 19.06.2012

- S32.** C5 on the north - western slopes around in Karanlıkdere, 37° 59' 52" N - 34° 26' 08" E 1547 m, 15.07.2012
- S33.** B5 on the western slopes between Yeşilburç and Çiftlik, 38° 06' 17" N - 34° 37' 46" E, 2017 m, 16.05.2010
- S34.** B5 on the northern slopes of Narlıgöl, 38° 20' 05" N - 34° 27' 30" E, 1408 m, 14.04.2011
- S35.** B5 on the southern slopes of Asmasız village, 38° 08' 09" N - 34° 29' 44" E, 1828 m, 15.05.2010
- S36.** B5 at the edge of pathway of the memorial forest in Yakacık village, 38° 06' 19" N - 34° 22' 50" E, 2139 m, 19.05.2012
- S37.** B5 on the upper slopes of Azatlı village, 38° 09' 20" N - 34° 31' 50" E, 1647m, 11.07.2010
- S38.** B5 on the upper slopes of Mahmutlu village, 38° 10' 45" N - 34° 23' 18" E, 1695 m, 11.07.2010
- S39.** B5 on the north - eastern slopes of Azatlı village, 38° 10' 20" N - 34° 30' 55" E, 1567 m, 05.06.2011
- S40.** B5 on the northern slopes of Göllüdağ, 38° 16' 23" N - 34° 33' 57" E, 1618 m, 16.07.2011
- S41.** B5 Kırlandı Valley nearby Karanlıkdere village (after Amberkaya), 38° 01' 49" N - 34° 28' 31" E, 1946 m, 02.06.2013
- S42.** B5 on the eastern slopes between Asmasız village and Yeşilyurt, 38° 07' 01" N - 34° 27' 01" E, 1908 m, 15.05.2010
- S43.** B5 on the upper slopes of Melikmeşe - Şallıhan Hills in Asmasız village, 38° 08' 16" N - 34° 29' 54" E, 1744 m, 15.05.2010
- S44.** B5 on stony slopes between Çiftlik and Yeşilyurt, 38° 07' 57" N - 34° 27' 26" E, 1729 m, 09.04.2010
- S45.** B5 on slopes around Murtaza Dam, 38° 09' 18" N - 34° 31' 55" E, 1800 m, 05.06.2011
- S46.** B5 on slopes between Murtazaköy and Azatlı village, 38° 08' 44" N - 34° 33' 49" E, 1843 m, 05.06.2011
- S47.** B5 on the northern slopes between Azatlı and Kömürcü villages, 38° 12' 05" N - 34° 31' 58" E, 1655 m, 17.07.2011
- S48.** B5 at edge of pathway around Kırlandı in Karanlıkdere, 38° 12' 05" N - 34° 31' 58" E, 1901 m, 22.06.2013
- S49.** B5 on the northern slopes of Sultanpınarı village, 38° 08' 03" N - 34° 31' 35" E, 1765 m, 14.04.2011.
- S50.** B5 on the northern slopes of Bozköy, 38° 13' 21" N - 34° 30' 32" E, 1625 m, 14.04.2011.
- S51.** B5 on the western slopes between Çiftlik and Yeşilyurt, 38° 07' 10" N - 34° 26' 51" E, 1839 m, 16.06.2011
- S52.** B5 on the northern slopes of Sultanpınarı, 38° 08' 13" N - 34° 31' 49" E, 1815 m, 17.07.2011
- S53.** B5 on the upper slopes of Mahmutlu village, 38° 10' 45" N - 34° 23' 18" E, 1684 m, 11.07.2010
- S54.** C5 on the upland of Okçu village, 37° 58' 37" N - 34° 30' 55" E, 1790 m, 20.07.2013

- S55.** B5 on the north - western slopes of Melendiz Mountain, 38° 06' 28" N - 34° 27' 00" E, 2114 m, 14.07.2012
- S56.** B5 between Ulukışla village and Kitireli, 38° 05' 02" N - 34° 17' 32" E, 1589 m, 22.05.2011
- S57.** B5 streamside on the northern slopes of Sultanpınarı, 38° 07' 59" N - 34° 31' 96" E, 1866 m, 17.07.2011
- S58.** B5 on the north - eastern slopes of Sultanpınarı village (exit of upland pathway), 38° 07' 59" N - 34° 31' 40" E, 1870 m, 23.07.2012
- S59.** B5 at the summit of Göllüdağ, 38° 15' 37" N - 34° 32' 45" E, 2038 m, 16.07.2011
- S60.** B5 at Kayacının Eşme Hill in Sultanpınarı village, 38° 05' 47" N - 34° 31' 39" E, 2048 m, 06.08.2011
- S61.** B5 under Juniper forest on the south - western slopes around Dedetepe Hill, 38° 07' 47" N - 34° 28' 04" E, 1707 m, 04.07.2012
- S62.** B5 on the south - western slopes around Dedetepe Hill, 38° 07' 57" N - 34° 28' 16" E, 1834 m, 04.07.2012
- S63.** C5 on the upland of Okçu village, 38° 58' 47" N - 34° 30' 34" E, 1782 m, 20.07.2013
- S64.** B5 between Sultanpınarı and Murtazaköy villages, 38° 08' 28" N - 34° 34' 08" E, 1873 m, 05.06.2011
- S65.** C5 under oak forest on the south - western slopes of Kızıltepe Hill in Tepeköy, 37° 58' 50" N - 34° 26' 31" E, 1560 m, 16.07.2012
- S66.** C5 on the upper slopes of Tepeköy village, 37° 59' 05" N - 34° 26' 27" E, 1453 m, 23.06.2013
- S67.** B5 on the western slopes of Sıralıkaya in Sultanpınarı village, 38° 06' 55" N - 34° 31' 42" E, 1998 m, 06.08.2011
- S68.** B5 Kırlandı Valley nearby Karanlıkdere village (after Amberkaya), 38° 01' 51" N - 34° 28' 15" E, 1911 m, 01.06.2013
- S69.** B5 on the upper slopes of Mahmutlu village, 38° 10' 41" N - 34° 23' 15" E, 1697 m, 11.07.2010
- S70.** B5 on the northern slopes of Kaletepe - Kurşunlu Hill in Asmasız village, 38° 08' 10" N - 34° 29' 27" E, 1967 m, 21.06.2012
- S71.** B5 between Asmasız village and Yeşilyurt, 38° 07' 09" N - 34° 27' 02" E, 1858 m, 15.05.2010
- S72.** B5 on stony slopes of Kulu village, 38° 09' 02" N - 34° 26' 31" E, 1580 m, 09.04.2010
- S73.** C5 on the north - western slopes of Kırlandı Valley nearby Karanlıkdere village, 37° 59' 52" N - 34° 26' 08" E, 1547 m, 15.07.2012
- S74.** B5 Kırlandı Valley nearby Karanlıkdere village (after Amberkaya), 38° 01' 38" N - 34° 28' 34" E, 2070 m, 22.06.2013
- S75.** B5 on the northern slopes of Kaletepe - Kurşunlu Hill in Asmasız village, 38° 08' 06" N - 34° 29' 28" E, 1745 m, 19.06.2012
- S76.** B5 on the northern slopes of Kaletepe - Kurşunlu Hill in Asmasız village, 38° 08' 06" N - 34° 29' 28" E, 1780 m, 20.06.2012
- S77.** B5 on the upper slopes of Mahmutlu village, 38° 10' 46" N - 34° 23' 12" E, 1681 m, 11.07.2010
- S78.** B5 on the north - western slopes around Dedetepe Hill, 38° 08' 01" N - 34° 28' 10" E, 1907 m, 04.07.2012



- S79.** B5 oak forest on western slopes behind Karanlıkdere village, 38° 08' 53" N - 34° 26' 34" E, 1653 m, 21.07.2012
- S80.** B5 streamside in Fesleğen village, 38° 00' 01" N - 34° 33' 24" E, 1691 m, 16.05.2010
- S81.** B5 on the upper slopes of Fesleğen village, 38° 00' 09" N - 34° 33' 03" E, 1975 m, 21.07.2013
- S82.** B5 on the north - eastern slopes of Bozdağ Hill, 38° 07' 22" N - 34° 28' 09" E, 2030 m, 06.07.2012
- S83.** B5 on slopes around Murtaza Dam, 38° 09' 16" N - 34° 32' 52" E, 1765 m, 11.07.2010
- S84.** B5 on the north - eastern slopes of Ortasirt Hill in Sultanpınarı, 38° 06' 02" N - 34° 31' 43" E, 2300 m, 22.0.2012
- S85.** C5 on the upper slopes of Balcı village, 37° 57' 58" N - 34° 27' 37" E, 1620 m, 06.07.2013
- S86.** B5 between Kayırlı and Bozköy villages, 38° 18' 12" N - 34° 30' 26" E, 1560 m, 14.04.2011
- S87.** B5 roadside around Kırlandı in Karanlıkdere village, 38° 01' 43" N - 34° 27' 47" E, 1796 m, 22.06.2013
- S88.** B5 on the south - eastern slopes of Melendiz Mountain, around Demirci, 38° 06' 23" N - 34° 27' 10" E, 2204 m, 14.07.2012
- S89.** B5 on the north - western slopes Topaktepe Hill, 38° 06' 49" N - 34° 27' 11" E, 2041 m, 08.07.2012
- S90.** B5 roadside between Niğde and Çiftlik, 38° 05' 39" N - 34° 37' 22" E, 1910 m, 21.07.2013
- S91.** B5 in open *Astragalus* community on slopes of Kurşunlu Hill in Asmasız Köyü, 38° 08' 25" N - 34° 29' 57" E, 1785 m, 30.06.2012

## Results and Discussion

The study was carried out with 959 plant specimens collected from the research area between 2010 and 2013. A total of 498 taxa (299 species, 138 subspecies and 61 varieties), belonging to 244 genera and 58 families, were determined. One of the 498 taxa are from Pteridophyta and 497 taxa belong to Magnoliophyta. Pinophytina has only 1 taxon and Magnoliophytina has 496 (Table 1). Finally, 22 taxa are considered new records for the B5 square and 1 taxon is for C5 square.

The largest families according to their species number in the research area are as follows: *Asteraceae* (67 taxa), *Fabaceae* (51 taxa) *Poaceae* and *Lamiaceae* (41 taxa), *Caryophyllaceae* (38 taxa), *Brassicaceae* (23 taxa), *Apiaceae* (20 taxa), *Boraginaceae* (21 taxa), *Rosaceae* (16 taxa). *Asteraceae*, the largest family in the study area, has the highest species number in the Flora of Turkey and the ecological tolerance of the species of the family are wide and their seeds are capable of spreading easily (Akçiçek 2009). *Fabaceae* is the second - largest family and *Poaceae* is the third - largest family in the study area as in the Flora of Turkey. The reason for this is the large number of wild leguminous and gramineous plants growing in cultivated areas (Vural & Aytaç 2005) (Table 2).

*Astragalus* is the largest genus in the area. The reason is that the taxa of the genus are able to resist extreme ecological conditions, biotic - abiotic factors as grazing and erosion.

Table.1. The number of taxa according to taxonomic categories.

Families	1	1	56	58
Genera	1	1	242	244
Species	1	-	298	299
Subspecies	-	1	137	138
Varieties	-	-	61	61
Taxa	1	1	496	498
% rate	0.2	0.2	99.6	100

Some members of *Veronica* being the second largest genus frequently grow in humid habitats. It shows that the study area which has xerophytic structure comprises microclimatic parts due to rough topography (Table 3).

The taxa can also be classified according to their life forms. Raunkiaer stated that the life form spectrum is an indicator of the climate or the region (Akman & al. 2000). Hemicryptophytes which are the commonest in the study area are followed by therophytes, cryptophytes, chamaephytes, phanerophytes and vascular parasites. The life forms of the taxa according to Raunkiaer are given in Table 4.

The study area reflects all features of Irano -Turanian region ideally. Therefore, Irano -Turanian phytogeographic region elements are seen more than Mediterranean phytogeographic region elements in the area. The reason of Euro -Siberian elements found less is that

Table 2. Comparison of large families between Melendiz Mountains and its surroundings and neighbouring areas.

Research area	Flora of Melendiz Mt. and its surroundings	Flora of Erciyes Mt.	Flora of Kervansaray Mt.	Flora of Karadağ	Flora of Hasan Mt.	Flora of Hodul Mt.
Altitude	2963m	3917m	1679m	2288m	3268m	1949m
<i>Asteraceae</i>	67	137	82	57	97	59
<i>Fabaceae</i>	51	116	66	46	81	37
<i>Poaceae</i>	41	88	59	36	47	20
<i>Lamiaceae</i>	41	71	42	29	45	38
<i>Caryophyllaceae</i>	38	70	39	25	46	26
<i>Brassicaceae</i>	23	65	46	31	55	30
<i>Apiaceae</i>	20	32	24	16	31	16
<i>Boraginaceae</i>	21	43	21	29	35	20
<i>Rosaceae</i>	16	46	19	19	28	14
Total taxa	498	1170	630	471	725	415

Table 3. The genera containing the highest number of taxa.

Genera	Flora of Melendiz Mt. and its surroundings	Flora of Erciyes Mt.	Flora of Kervansaray Mt.	Flora of Karadağ	Flora of Hasan Mt.	Flora of Hodul Mt.
Altitude	2963m	3917m	1679m	2288m	3268m	1949m
<i>Astragalus</i>	11	40	22	10	16	14
<i>Veronica</i>	10	19	10	8	8	5
<i>Silene</i>	9	22	11	8	15	8
<i>Trifolium</i>	9	9	6	5	9	4
<i>Salvia</i>	7	15	9	4	6	9
<i>Centaurea</i> ( <i>Cyanus</i> 3)	7	12	11	8	9	9
<i>Ranunculus</i>	7	11	7	5	9	3
<i>Minuartia</i>	7	9	8	3	5	2
<i>Lathyrus</i>	7	4	1	5	6	1
Total taxa	498	1170	630	471	725	415

the research area is located in the transition zone of Irano -Turanian and Mediterranean phytogeographic regions. Indeed, before the influence of Irano-Turanian flora on Central Anatolia it had a typical Mediterranean flora (Takhtajan 1986). Today, for this reason there is a markedly change in Central Anatolia in respect to plant geography and Irano-Turanian species has been taking place of Mediterranean ones (Kurt & al. 2006). The distribution rate of the species in the phytogeographic regions is compared with neighbouring areas in Table 5. It shows that Mediterranean phytogeographic region has more influence in the studies carried out in the southern areas although all studies in the Table 5 is in Irano -Turanian phytogeographic region.

The endemism rate in the study area is 14.6 % and is below the average of the endemism rate of Turkey. The reason is that the area is under the effects of agriculture and gra-

Table 4. Life forms in the research area.

Life form	Number of taxa	Rate (%)
Hemicryptophyte	227	45,58
Therophyte	138	27,71
Cryptophyte	54	10,84
Chamaephyte	50	10,04
Phanerophyte	24	4,81
Vascular parasite	5	1,00
Total	498	100

Table 5. A comparison of the phytogeographic elements.

Research area	Flora of Melendiz Mt. and its surroundings	Flora of Erciyes Mt.	Flora of Kervansaray Mt.	Flora of Karadağ	Flora of Hasan Mt.	Flora of Hodul Mt.
Altitude	2963m	3917m	1679m	2288m	3268m	1949m
Irano -Turanian elements (%)	24.09	29.7	32.1	25.5	24.3	29.63
Mediterranean elements (%)	9.23	6.8	5.8	11.6	7.3	5.54
Euro -Siberian elements (%)	4.61	5.9	6.8	3.1	5.8	3.61
Unknown phytogeographic region (%)	62.04	57.6	55.3	59.8	62.6	61.20
Total taxa	498	1170	630	471	725	415

zing. The endemism rate of the species in the research area is compared with neighbouring areas in Table 6. The rates of endemism of the studies are close to each other. However, there are quite a little variations due to the anthropogenic effects, different microclimates, geomorphologic structure or edaphic factors. According to IUCN threat categories, the number of endemic plants in the study area are as follows: *Bolanthus spergulifolius* – VU, *Astragalus talasseus* – VU, *Onobrychis sulphurea* var. *sulphurea* – VU, *Minuartia corymbulosa* var. *corymbulosa* – NT, *Silene caryophylloides* subsp. *masmenaea* – NT, *Sempervivum brevipilum* – NT, *Paracaryum longipes* – NT, *Stachys cretica* subsp. *anatolica* – NT, *Linaria genistifolia* subsp. *polyclada* – NT, *Quercus vulcanica* – NT, 61 taxa LC (Ekim & al. 2000; IUCN 2001).

Table 6. Comparison of endemism.

Research area	Flora of Melendiz Mt. and its surroundings	Flora of Erciyes Mt.	Flora of Kervansaray Mt.	Flora of Karadağ	Flora of Hasan Mt.	Flora of Hodul Mt.
Altitude	2963m	3917m	1679m	2288m	3268m	1949m
Endemic species	73	194	104	63	98	74
Endemism (%)	14.6	17.2	16.8	13.5	13.5	17.8
Total taxa	498	1170	630	471	725	415

**List of Taxa**

New records for B5 square \*

## PTERIDOPHYTA

## CYSTOPTERIDACEAE

*Cystopteris fragilis* (L.) Bernh., S1, N. Kenar 1832, S2, N. Kenar 1400, Hcrp.

## SPERMATOPHYTA

## MAGNOLIOPHYTA

## PINOPHYTINA

## PINIDAE

## CUPRESSACEAE

*Juniperus oxycedrus* L. subsp. *oxycedrus* - S2, N. Kenar 1416, Ph.

## MAGNOLIOPHYTINA

## MAGNOLIIDAE

## RANUNCULACEAE

*Adonis aestivalis* L. subsp. *aestivalis* - S6, N. Kenar 1104; S7, N. Kenar 1521, Th.

*Adonis flammea* Jacq. - S8, N. Kenar 1145; S9, N. Kenar 1154, Th.

*Ceratocephala falcata* (L.) Pers. - S17, N. Kenar 1464, Th.

*Consolida orientalis* (Gay) Schröd. - S5, N. Kenar 1659, Th.

*Delphinium dasystachyon* Boiss. & Bal. - S4, N. Kenar 2032, endemic, Ir.-Tur. element, Hcrp.

*Nigella arvensis* var. *glauca* Boiss. - S3, N. Kenar 1880, Th.

*Ranunculus constantinopolitanus* (DC.) d'Urv - S13, N. Kenar 1065, Hcrp.

*Ranunculus cuneatus* Boiss. - S14, N. Kenar 1494, Crp.

*Ranunculus demissus* var. *major* Boiss. - S10, N. Kenar 1992, endemic, Hcrp.

*Ranunculus dissectus* subsp. *sibthorpii* Davis - S11, N. Kenar 1921, Ch.

\**Ranunculus ficaria* subsp. *ficariiformis* Rouy & Fouc. - S16, N. Kenar 1847, Crp.

*Ranunculus illyricus* L. subsp. *illyricus* - S15, N. Kenar 1648, Crp.

*Ranunculus kotschyi* Boiss. - S12, N. Kenar 1478, Ch.

## PAPAVERACEAE

*Fumaria parviflora* Lam. - S23, N. Kenar 1247; S24, N. Kenar 1585, Th.

*Fumaria vailantii* Lois. - S5, N. Kenar 1662, Th.

*Glaucium leiocarpum* Boiss. - S5, N. Kenar 1655; S18, N. Kenar 1757, Hcrp.

*Hypocoum procumbens* L. - S5, N. Kenar 1663, Medit. element, Th.

*Hypocoum pseudograndiflorum* Petrovic - S22, N. Kenar 1111, Th.

*Papaver argemone* L. subsp. *argemone* - S7, N. Kenar 1518, Th.

*Papaver bracteatum* Lindl. - S1, N. Kenar 2015, Hcrp.

*Papaver dubium* L. subsp. *dubium* - S5, N. Kenar 1667, Th.

*Papaver rhoeas* L. - S19, N. Kenar 1183, Th.

## BRASSICACEAE

*Aethionema arabicum* (L.) Andr. ex DC. - S26, N. Kenar 1990, Th.

- \**Aethionema cordatum* (Desf.) Boiss. - S27, N. Kenar 1994, Hcrp.  
*Alliaria petiolata* (M. Bieb.) Cavara & Grande - S41, N. Kenar 1982, Th.  
*Alyssum hirsutum* Bieb. subsp. *hirsutum* - S12, N. Kenar 1481; S7, N. Kenar 1523, Th.  
*Alyssum minutum* Schlecht. ex DC. - S29, N. Kenar 1062; S12, N. Kenar 1481, Th.  
*Alyssum murale* Waldst. & Kit. subsp. *murale* var. *murale* - S32, N. Kenar 1911, Hcrp.  
*Alyssum simplex* Rudolph - S24, N. Kenar 1587, Th.  
*Alyssum strigosum* Banks & Sol. subsp. *strigosum* - S31, N. Kenar 1897, Th.  
*Arabis alpina* subsp. *brevifolia* (DC.) Cullen - S35, N. Kenar 1072; S12, N. Kenar 1473,  
 E. Medit. element, Ch.  
*Camelina rumelica* Vel. - S24, N. Kenar 1589; S5, N. Kenar 1660, Th.  
*Draba bruniifolia* Stev. subsp. *bruniifolia* - S30, N. Kenar 1920, Hcrp.  
*Draba bruniifolia* subsp. *olympica* (Sibth. ex DC.) Coode & Cullen - S33, N. Kenar 1129;  
 S12, N. Kenar 1475, Ch.  
*Draba verna* L. - S2, N. Kenar 1411; S34, N. Kenar 1421; S12, N. Kenar 1483, Th.  
*Erysimum crassipes* Fisch. & Meyer - S38, N. Kenar 1277; S9, N. Kenar 1162; S39, N.  
 Kenar 1576; S40, N. Kenar 1785, Hcrp.  
*Erysimum cuspidatum* (Bieb.) DC. - S37, N. Kenar 1211; S12, N. Kenar 1474, Hcrp.  
*Fibigia clypeata* subsp. *clypeata* var. *eriocarpa* (DC.) Post - S28, N. Kenar 1896, Hcrp.  
*Hesperis bicuspidata* (Willd.) Poiret - S36, N. Kenar 1845, endemic, Ir.-Tur. element, Hcrp.  
*Isatis floribunda* Boiss. ex Bornm. - S25, N. Kenar 1806, endemic, Ir.-Tur. element, Hcrp.  
*Lepidium chalepense* L. - S23, N. Kenar 1235, Hcrp.  
*Matthiola longipetala* subsp. *bicornis* (Sibth. & Smith) P.W. Ball - S7, N. Kenar 1514, Th.  
*Microthlaspi perfoliatum* (L.) F. K. Mey - S20, N. Kenar 1461, Th.  
*Sisymbrium altissimum* L. - S7, N. Kenar 1517, Hcrp.  
*Sisymbrium loeselii* L. - S43, N. Kenar 1079; S7, N. Kenar 1526, Th.

#### RESEDACEAE

- Reseda lutea* L. var. *lutea* - S9, N. Kenar 1181; S39, N. Kenar 1575; S25, N. Kenar 1812, Hcrp.

#### CISTACEAE

- Helianthemum microcarpum* Coss ex. Boiss., - S48, N. Kenar 1964, Th.  
*Helianthemum nummularium* (L.) Mill. subsp. *nummularium* - S7, N. Kenar 1525; S47, N.  
 Kenar 1689, Ch.

#### VIOLACEAE

- Viola modesta* Fenzl. - S49, N. Kenar 1431; S50, N. Kenar 1434, Th.  
*Viola occulta* Lehm. - S46, N. Kenar 1557, Th.  
*Viola parvula* Tin. - S20, N. Kenar 1454, Th.

#### POLYGALACEAE

- Polygala anatolica* Boiss. & Heldr. - S42, N. Kenar 1045; S43, N. Kenar 1077; S51, N.  
 Kenar 1604; S52, N. Kenar 1728, Hcrp.

#### CARYOPHYLLACEAE

- Agrostemma githago* L. - S65, N. Kenar 1915, Th.

- Arenaria serpyllifolia* L. subsp. *serpyllifolia* - S39, N. Kenar 1543, Th.
- Bolanthus spergulfifolius* (Jaub. & Spach.) Hub. - Mor. - S60, N. Kenar 1820, endemic, Ch.
- Cerastium dichotomum* L. subsp. *dichotomum* - S24, N. Kenar 1586, Th.
- Cerastium dubium* (Bastard) O. Schwarz - S12, N. Kenar 1482; S56, N. Kenar 1490; S39, N. Kenar 1540, Th.
- Cerastium glomeratum* Thuill. - S48, N. Kenar 2011, Th.
- Dianthus anatolicus* Boiss. - S25, N. Kenar 1808, endemic, Hcrp.
- Dianthus calocephalus* Boiss. - S38, N. Kenar 1271, Hcrp.
- Dianthus crinitus* Sm. var. *crinitus* - S38, N. Kenar 1265; S52, N. Kenar 1717, Hcrp.
- Dianthus zedebaueri* Vierh. - S57, N. Kenar 1731, endemic, Ir.-Tur. element, Hcrp.
- Dianthus zonatus* var. *hypochlorus* (Boiss. & Heldr.) Reeve - S58, N. Kenar 2000, Hcrp.
- Dianthus zonatus* Fenzl. var. *zonatus* - S47, N. Kenar 1691, Hcrp.
- Eremogone ledebouriana* (Fenzl) Ikonn - S18, N. Kenar 1278; S52, N. Kenar 1726; endemic, Hcrp.
- Gypsophila laricina* Schreb. - S59, N. Kenar 1747, endemic, Ir.-Tur. element, Ch.
- Holosteum umbellatum* var. *glutinosum* (M. Bieb.) Gay - S2, N. Kenar 1414, Th.
- Holosteum umbellatum* L. var. *umbellatum* - S51, 16.06.2011, N. Kenar 1611, Th.
- Minuartia aizoides* (Boiss.) Bornm. - S11, N. Kenar 1925, Ch.
- Minuartia corymbulosa* (Boiss. & Bal.) McNeill var. *corymbulosa* - S55, N. Kenar 1883, endemic, Ir.-Tur. element, Hcrp.
- Minuartia decipiens* (Fenzl) Bornm. - S54, N. Kenar 2028, Th.
- Minuartia hirsuta* subsp. *falcata* (Gris) Mattf. - S43, N. Kenar 1080, Hcrp.
- Minuartia hybrida* subsp. *turcica* McNeil - S25, N. Kenar 1805, Th.
- Minuartia juniperina* (L.) Maire & Petitm. - S33, N. Kenar 1122, Ch.
- Minuartia recurva* subsp. *oreina* (Mattf.) McNeill - S51, N. Kenar 1602, Ch.
- Petrorhagia alpina* (Habl.) Ball & Heywood subsp. *alpina* - S51, N. Kenar 1605, Th.
- Saponaria orientalis* L. - S23, N. Kenar 1246, Th.
- \**Saponaria pamphlica* Boiss. & Hedr. - S7, N. Kenar 1505, endemic, Eux. element, Hcrp.
- Saponaria prostrata* Willd. subsp. *prostrata* - S53, N. Kenar 1288, endemic, Ir.-Tur. element, Th.
- Scleranthus annuus* L. subsp. *annuus* - S66, N. Kenar 1984, Th.
- Silene armena* Boiss. var. *armena* - S61, N. Kenar 1932, endemic Hcrp.
- Silene caramanica* Boiss. & Heldr. var. *caramanica* - S1, N. Kenar 1834, endemic, E. Medit. element, Hcrp.
- \**Silene caryophylloides* subsp. *masmenaea* (Boiss.) Coode & Cullen - S60, N. Kenar 1818, endemic, Hcrp.
- Silene chlorifolia* Sm. - S62, N. Kenar 1860, Ir.-Tur. element, Hcrp.
- Silene dichotoma* Ehrh. subsp. *dichotoma* - S65, N. Kenar 1903, Th.
- Silene rhynchocarpa* Boiss. - S64 N. Kenar 1550, E. Medit. element, Ch.
- Silene subconica* Friv. - S7, N. Kenar 1504; S24, N. Kenar 1579, Th.
- Silene supina* subsp. *pruinosa* (Boiss.) Chowdh. - S63, N. Kenar 2037, Ch.
- Silene vulgaris* (Moench) Garcke var. *vulgaris* - S57, N. Kenar 1743, Hcrp.
- Velezia rigida* L. - S5, N. Kenar 1672, S47, N. Kenar 1690, Th.

*POLYGONACEAE*

- Polygonum convolvulus* L. - S38, N. Kenar 1248, Hcrp.  
*Polygonum persicaria* L. - S1, N. Kenar 1830, Th.  
*Rumex acetosella* L. - S39, N. Kenar 1572, Hcrp.  
*Rumex crispus* L. - S37, N. Kenar 1230, Hcrp.  
*Rumex scutatus* L. - S51, N. Kenar 1599, S67, N. Kenar 1839, Ch.  
*Rumex tuberosus* L. subsp. *tuberosus* - S47, N. Kenar 1682, Crp.

*AMARANTHACEAE*

- Amaranthus retroflexus* L. - S69, N. Kenar 1237, Th.  
*Chenopodium album* L. subsp. *album* var. *album* - S68, N. Kenar 2018, Th.  
*Chenopodium foliosum* Asch. - S1, N. Kenar 1822, Th.

*HYPERICACEAE*

- Hypericum lydiium* Boiss. - S70, N. Kenar 1874, Hcrp.  
*Hypericum perforatum* subsp. *veronense* (Schrank) H. Linb. - S52, N. Kenar 1714, Hcrp.  
*Hypericum pseudolaeye* Robson - S26, N. Kenar 2038, endemic. Ir.-Tur. element, Hcrp.  
*Hypericum scabrum* L. - S26, N. Kenar 2039, Ir.-Tur. element, Ch.

*MALVACEAE*

- Alcea biennis* Winterl - S68, N. Kenar 1838, Hcrp.  
*Malva neglecta* Wallr. - S37, N. Kenar 1202, Th.

*LINACEAE*

- Linum nodiflorum* L. - S8, N. Kenar 1148, Medit. element, Th.

*GERANIACEAE*

- Erodium cicutarium* (L.) L'Hérit. subsp. *cutarium* - S34, N. Kenar 1419; S39, N. Kenar 1547, Th.  
*Geranium macrostylum* Boiss. - S71, N. Kenar 1046; S56, N. Kenar 1493, E. Medit. element, Crp.  
*Geranium pusillum* Burm. - S39, N. Kenar 1548, Th.  
*Geranium pyrenaicum* Burm. - S57, N. Kenar 1735; S1, N. Kenar 1831, Hcrp.  
*Geranium tuberosum* L. subsp. *tuberosum* - S45, Ir.-Tur. element, Crp.  
*Pelargonium endlicherianum* Fenzl. - S65, N. Kenar 1995, Hcrp.

*RHAMNACEAE*

- \**Rhamnus lycioides* subsp. *oleoides* (L.) Jahandiez&Marie - S73, N. Kenar 1885, Ph.

*SAPINDACEAE*

- Acer hyrcanum* Fisch. & C. A. Mey. subsp. *hyrcanum* - S74, N. Kenar 2013, Euro-Sib. element, Ph.

*FABACEAE*

- Anthyllis vulneraria* subsp. *variegata* (Boiss.) Cullen - S57, N. Kenar 1733, endemic, E. Medit. element, Hcrp.



- Astragalus acmophyllus* Bunge - S61, N. Kenar 1890, Ir.-Tur. element, Ch.  
*Astragalus angustifolius* Lam. subsp. *angustifolius* - S76, N. Kenar 1876, Ch.  
*Astragalus hamosus* L. - S39, N. Kenar 1536, Th.  
*Astragalus lagopoides* Vahl. - S41, N. Kenar 1865, Ir.-Tur. element, Ch.  
*Astragalus lamarckii* Boiss. - S75, N. Kenar 1894, endemic, Ir.-Tur. element, Ch.  
*Astragalus lycius* Boiss. - S39, N. Kenar 1533, endemic, Hcrp.  
*Astragalus mesogitanus* Boiss. - S9, N. Kenar 1161; S8, N. Kenar 1156; S7, N. Kenar 1507, Ir.-Tur. element, endemic, Hcrp.  
*Astragalus microcephalus* Willd. subsp. *microcephalus* - S75, N. Kenar 1864, Ir.-Tur. element, Ch.  
*Astragalus plumosus* Willd. - S63, N. Kenar 2040, Ir.-Tur. element, Ch.  
*Astragalus pycnocephalus* Fisch. - S54, N. Kenar 2027, Ir.-Tur. element, Ch.  
*Astragalus talasseus* Boiss. & Bal. - S47, N. Kenar 1703, endemic, Ir.-Tur. element, Ch.  
*Dorycnium graceum* (L.) Ser. - S47, N. Kenar 1684, Eux. element, Hcrp.  
*Dorycnium pentaphyllum* subsp. *anatolicum* (Boiss.) Gams - S81, N. Kenar 2035, Hcrp.  
*Lathyrus aureus* (Stev.) Brandza - S62, N. Kenar 1863, Eux. element, Th.  
*Lathyrus cicera* L. - S56, N. Kenar 1488, Medit. element, Th.  
*Lathyrus czechottianus* Bässler - S78, N. Kenar 1891, endemic, Euro-Sib. element, Hcrp.  
*Lathyrus digitatus* (Bieb.) Fiori - S75, N. Kenar 1869, E. Medit. element, Hcrp.  
*Lathyrus haussknechtii* Širj. - S77, N. Kenar 1193, endemic, Ir.-Tur. element, Hcrp.  
*Lathyrus inconspicuus* L. var. *inconspicuus* - S45, N. Kenar 1556; S46, N. Kenar 1560, Th.  
*Lathyrus spathulatus* Čelak. - S46, N. Kenar 1558; S22, N. Kenar 1179; S56, N. Kenar 1489, E. Medit. element, Hcrp.  
*Lotus aegaeus* (Gris.) Boiss. - S38, N. Kenar 1269; S40, N. Kenar 1794, Ir.-Tur. element, Hcrp.  
*Lotus corniculatus* var. *alpinus* Ser. - S62, N. Kenar 1861, Hcrp.  
*Lotus corniculatus* L. var. *corniculatus* - S37, N. Kenar 1213; S15, N. Kenar 1650, Hcrp.  
*Medicago ficheriana* (Ser.) Trautv. - S39, N. Kenar 1535; S5, N. Kenar 1631, Ir.-Tur. element, Th.  
*Medicago lupulina* L. - S29, N. Kenar 1059, Hcrp.  
*Medicago rigidula* (L.) All. var. *rigidula* - S7, N. Kenar 1506; S39, N. Kenar 1033; S5, N. Kenar 1656, Th.  
*Medicago sativa* L. subsp. *sativa* - S38, N. Kenar 1267; S19, N. Kenar 1182; S47, N. Kenar 1696; S52, N. Kenar 1720, Hcrp.  
*Onobrychis hypargyrea* Boiss. - S4, N. Kenar 2036, Hcrp.  
*Onobrychis montana* subsp. *cadmea* (Boiss.) P.W. Ball - S60, N. Kenar 1821, Hcrp.  
*Onobrychis oxyodonta* var. *armena* (Boiss. & Huet.) - S47, N. Kenar 1697; S40, N. Kenar 1800; S66, N. Kenar 1987, Hcrp.  
*Onobrychis sulphurea* Boiss. & Bal. var. *sulphurea* - S45, N. Kenar 1554; S52, N. Kenar 1713; S51, N. Kenar 1600, endemic, Ir.-Tur. element, Ch.  
*Ononis pusilla* L. - S79, N. Kenar 1947, Medit. element, Th.  
*Ononis spinosa* subsp. *leiosperma* (Boiss.) Širj. - S53, N. Kenar 1275, Hcrp.  
*Securigera varia* (L.) Lassen - S23, N. Kenar 1245; S18, N. Kenar 1768; S47, N. Kenar 1687, E. Medit. element, Hcrp.  
*Trifolium arvense* L. var. *arvense* - S38, N. Kenar 1270; S31, N. Kenar 1867, Th.  
*Trifolium campestre* Schreb. - S5, N. Kenar 1625; S31, N. Kenar 1868, Th.

- Trifolium elongatum* Willd. - S70, N. Kenar 1873, endemic, Hcrp.  
*Trifolium hirtum* All. - S15, N. Kenar 1636, Medit. element, Th.  
*Trifolium hybridum* var. *anatolicum* (Boiss.) Boiss. - S38, N. Kenar 1252; S13, N. Kenar 1098; S80, N. Kenar 1132, Hcrp.  
 \**Trifolium ochroleucum* Huds. - S38, N. Kenar 1259; S47, N. Kenar 1695, Hcrp.  
*Trifolium physodes* Stev. ex Bieb. var. *physodes* - S22, N. Kenar 1110; S39, N. Kenar 1534; S15, N. Kenar 1638; S51, N. Kenar 1609, Medit. element, Hcrp.  
*Trifolium pratense* L. var. *pratense* - S52, 17.07.2011, N. Kenar 1721, Hcrp.  
 \**Trifolium scabrum* L. - S7, N. Kenar 1519; S15, N. Kenar 1636, Medit. element, Th.  
*Trigonella coerulescens* (Bieb.) Hal. subsp. *coerulescens* - S7, N. Kenar 1508, Th.  
*Vicia caesarea* Boiss.&Bal. - S24, N. Kenar 1592, Ir.-Tur. element, endemic, Th.  
*Vicia cracca* subsp. *stenophylla* Vel. - S38, N. Kenar 1254; S47, N. Kenar 1698, Hcrp.  
*Vicia grandiflora* Scop. var. *grandiflora* - S68, N. Kenar 1989, Th.  
 \**Vicia monantha* Retz. subsp. *monantha* - S76, N. Kenar 1878, Th.  
*Vicia peregrina* L. - S24, N. Kenar 1581, Th.  
*Vicia truncatula* Fischer ex Bieb. - S26, N. Kenar 2016, Euro-Sib. element, Hcrp.

#### ROSACEAE

- Amygdalus orientalis* Mill. - S65, N. Kenar 1905, Ir.-Tur. element, Ph.  
*Cerasus prostrata* (Lab.) Ser. var. *prostrata* - S38, N. Kenar 1268; S74, N. Kenar 2001, Ph.  
*Cotoneaster nummularius* Fisch & Mey. - S52, N. Kenar 1730, Ph.  
*Crataegus monogyna* Jacq. var. *monogyna* - S8, N. Kenar 1143, Ph.  
*Crataegus orientalis* Pallans ex M. Bieb. subsp. *orientalis* - S26, N. Kenar 1970, Ph.  
*Crataegus orientalis* Pallans ex M. Bieb. subsp. *szovitsii* (Pojark) K.I. Chr. - S83, N. Kenar 1289; S80, N. Kenar 1139; S13, N. Kenar 1097; S69, N. Kenar 1232, Ir.-Tur. element, Ph.  
*Filipendula vulgaris* Moench - S52, N. Kenar 1723, Euro-Sib. element, Hcrp.  
*Potentilla meyeri* Boiss. - S5, N. Kenar 1628; S52, N. Kenar 1722, Ir.-Tur. element, Hcrp.  
*Potentilla recta* L. - S18, N. Kenar 1774, Hcrp.  
*Prunus divaricata* Ledeb. var. *divaricata* - S79, N. Kenar 1991, Ph.  
*Pyrus eleagnifolia* Pallas subsp. *eleagnifolia* - S47, N. Kenar 1702, Ph.  
*Rosa canina* L. - S38, N. Kenar 1251; S13, N. Kenar 1086; S5, N. Kenar 1679; S47, N. Kenar 1704, Ph.  
*Rosa hemisphaerica* J. Herrm. - S42, N. Kenar 1060; S39, N. Kenar 1571, Ir.-Tur. element, Ph.  
*Rosa pulverulenta* Bieb. - S18, N. Kenar 1778; S25, N. Kenar 1815; S82, N. Kenar 1908, Ph.  
*Sanguisorba minor* subsp. *balearica* (Bourg. ex Nyman) Muñoz Garm. & C. Navarro - S37, N. Kenar 1220; S39, N. Kenar 1573; S15, N. Kenar 1647, Hcrp.  
*Sorbus umbellata* Frisch - S62, N. Kenar 1862, Ph.

#### ONAGRACEAE

- Epilobium angustifolium* L. - S74, N. Kenar 2014, Crp.  
 \**Epilobium roseum* subsp. *subsessile* (Boiss.) P.H. Raven - S1, N. Kenar 1835, Crp.

#### CRASSULACEAE

- Rosularia libanotica* (Lab.) Muirhead - S1, N. Kenar 1826, E. Medit. element, Hcrp.

- Sedum album* L. - S1, N. Kenar 1827, Ch.  
*Sedum hispanicum* L. - S75, N. Kenar 1876, Ir.-Tur. element, Th.  
*Sedum laconicum* Boiss. & Heldr. - S25, N. Kenar 1813, E. Medit. element, Ch.  
*Sedum subulatum* (C.A. Meyer) Boiss. - S82, N. Kenar 1912, Ch.  
*Sedum tenellum* Bieb. - S51, N. Kenar 1601, Ch.  
*Sempervivum brevipilum* Muirhead - S84, N. Kenar 1930, Ir.-Tur. element, endemic, Ch.  
*Umbilicus luteus* (Huds.) Webb. & Berthel - S1, N. Kenar 1833, Crp.

#### APIACEAE

- Anthriscus nemorosa* (M. Bieb.) Sprengel - S26, N. Kenar 1981, Hcrp.  
*Artemisia squamata* L. - S5, N. Kenar 1676, Th.  
*Bupleurum gerardi* All. - S21, N. Kenar 2023, Th.  
*Bupleurum sulphureum* Boiss. & Bal. - S4, N. Kenar 2030, endemic, Ir.-Tur. element, Th.  
*Carum meifolium* (Bieb.) Boiss. - S57, N. Kenar 1737, Hcrp.  
*Caucalis platycarpus* L. - S38, N. Kenar 1249; S46, N. Kenar 1562, Th.  
*Eryngium campestre* var. *virens* - S62, N. Kenar 1859, Hcrp.  
*Ferula rigidula* DC. - S21, N. Kenar 2024, Ir.-Tur. element, Crp.  
*Ferulago aucheri* Boiss. - S78, N. Kenar 1892, endemic, Hcrp.  
*Gasparrinia peucedanoides* Thell. - S82, N. Kenar 1913, Euro-Sib. element, Hcrp.  
*Heracleum argeum* Boiss. & Bal. - S84, N. Kenar 1993, endemic, Hcrp.  
*Malabaila secacul* (Mill.) Boiss. subsp. *secacul* - S47, N. Kenar 1688, Hcrp.  
*Pimpinella olivieroides* Boiss. & Hausskn. - S69, N. Kenar 1240; S38, N. Kenar 1266, Hcrp.  
*Prangos meliocarpoides* Boiss. var. *meliocarpoides* - S22, N. Kenar 1180; S59, N. Kenar 1749, endemic, Ir.-Tur. element, Crp.  
*Scandix australis* subsp. *grandiflora* (L.) Thell. - S8, N. Kenar 1147, Th.,  
*Scandix stellata* Banks & Sol. - S85, N. Kenar 2010, Th.  
*Torilis leptophylla* (L.) Reichb. - S39, N. Kenar 1546; S5, N. Kenar 1658; S15, N. Kenar 1643, Th.  
*Torilis ucranica* Sprengel - S65, N. Kenar 1900, Th.  
*Turgenia latifolia* (L.) Hoffm. - S46, N. Kenar 1561, Th.  
*Zosima absinthifolia* (Vent.) Link - S5, N. Kenar 1675, Hcrp.

#### CAPRIFOLIACEAE

- Cephalaria sparsipilosa* Matthews - S84, N. Kenar 1997, endemic, Ir.-Tur. element, Hcrp.  
*Lonicera nummulariifolia* Jaub. & Spach. subsp. *nummularifolia* - S74, N. Kenar 2012, Ph.  
*Morina persica* L. var. *persica* - S5, N. Kenar 1678; S25, N. Kenar 1816, Ir.-Tur. element, Hcrp.  
*\*Pterocephalus pinardii* Boiss. - S18, N. Kenar 1779, endemic, E. Medit. element, Hcrp.  
*Pterocephalus plumosus* (L.) Coulter - S5, N. Kenar 1674, Th.  
*Scabiosa argentea* L. - S18, N. Kenar 1286, S40, N. Kenar 1783, Hcrp.  
*Scabiosa micrantha* Desf. - S47, N. Kenar 1693, Th.  
*Scabiosa rotata* Bieb. - S73, Ir.-Tur. element, Th.  
*Valeriana dioscoridis* Sm. - S21, N. Kenar 1983, E. Medit. element, Crp.  
*Valeriana leucophaea* DC. - S13, N. Kenar 1091; S51, N. Kenar 1608, Hyrano – Eux. (mt.) element, Crp.  
*Valerianella coronata* (L.) DC. - S15, N. Kenar 1640, S7, N. Kenar 1513a, Th.

*Valerianella locusta* (L.) Laterrade - S34, N. Kenar 1424; S2, N. Kenar 1410, Euro-Sib. element?, Th.

*Valerianella pumila* (L.) DC. - S7, N. Kenar 1513, Th.

*Valerianella vesicaria* (L.) Moench. - S9, N. Kenar 1166, Th.

#### COMPOSITAE

*Achillea coarctata* Poir. - S18, N. Kenar 1770, Hcrp.

*Achillea gonioccephala* Boiss. & Bal. - S19, N. Kenar 1185, Ir.-Tur. element, endemic, Hcrp.

*Achillea kotschyi* Boiss. subsp. *kotschyi* - S59, N. Kenar 1750, Hcrp.

*Achillea santolinoides* subsp. *wilhelmsii* (K. Koch.) Greuter - S5, N. Kenar 1668; S40, N. Kenar 1798, Ir.-Tur. element, Hcrp.

*Achillea setacea* Waldst. & Kit. - S19, N. Kenar 1039, Euro-Sib. element, Hcrp.

*Achillea teretifolia* Willd. - S48, N. Kenar 1971, endemic, Ir.-Tur. element, Hcrp.

*Anagallis arvensis* var. *caerulea* (L.) Gouan - S7, N. Kenar 1522, Th.

*Anagallis foemina* Mill. - S22, N. Kenar 1119; S8, N. Kenar 1151; S5, N. Kenar 1671, Medit. element, Th.

*Androsace maxima* L. - S22, N. Kenar 1113; S9, N. Kenar 1172, Th.

*Anthemis cretica* subsp. *albida* (Boiss.) Grierson - S62, N. Kenar 1866, Hcrp.

*Anthemis cretica* subsp. *anatolica* (Boiss.) Grierson - S87, N. Kenar 1972, Hcrp.

*Asyneuma limonifolium* subsp. *pestalozzae* (Boiss.) Dambolt - S77, N. Kenar 1196; S37, N. Kenar 1217; S5, N. Kenar 1619; S18, N. Kenar 1771, endemic, Hcrp.

*Campanula cymbalaria* Sm. - S30, N. Kenar 1918, E. Medit. element, Hcrp.

*Campanula glomerata* L. subsp. *hispida* (Witasek) Hayek - S52, N. Kenar 1716; S1, N. Kenar 1825, Euro-Sib. element, Hcrp.

*Campanula stricta* L. subsp. *stricta* - S47, N. Kenar 1685; S25, N. Kenar 1809, Ir.-Tur. element, Hcrp.

*Carduus nutans* L. subsp. *nutans* - S37, N. Kenar 1225; S5, N. Kenar 1677, Hcrp.

*Carduus pycnocephalus* subsp. *albidus* (Bieb.) Kazmi - S7, N. Kenar 1511; S6, N. Kenar 1100; S39, N. Kenar 1569, Th.

*Centaurea iberica* Trev. ex Sprengel - S10, N. Kenar 1999, Th.

*Centaurea solstitialis* L. subsp. *solstitialis* - S37, N. Kenar 1227, Th.

*Centaurea urvillei* subsp. *stepposa* Wagenitz - S37, N. Kenar 1226; S47, N. Kenar 1683; S40, N. Kenar 1797, Hcrp.

*Centaurea virgata* Lam. - S40, N. Kenar 1801, Ir.-Tur. element, Hcrp.

*Chondrilla juncea* L. - S63, N. Kenar 2004, Hcrp.

*Cichorium inthybus* L. - S53, N. Kenar 1282, Hcrp.

*Cirsium leucocephalum* (Willd.) Spreng. subsp. *leucocephalum* - S30, N. Kenar 1916, Ir.-Tur. element, Hcrp.

*Cota austriaca* (Jacq.) Sch. Bip. - S50, N. Kenar 1444; S7, N. Kenar 1502, Th.

*Cota tinctoria* (L.) J. Gay & ex Guss. - S15, N. Kenar 1646; S47, N. Kenar 1701, Hcrp.

*Crepis foetida* subsp. *rholeadifolia* (M. Bieb.) Čelak. - S63, N. Kenar 2005, Th.

*Crepis macropus* Boiss. & Heldr. - S7, N. Kenar 1529; S5, N. Kenar 1617, Ir.-Tur. element, endemic, Hcrp.

*Crepis sancta* (L.) Bornm. - S7, N. Kenar 1520, Th.

*Crupina crupinastrum* (Moris) Vis. - S5, N. Kenar 1629, Th.

- Cyanus depressa* (M.Bieb.) Soják - S38, N. Kenar 1261; S52, N. Kenar 1719, Th.  
*Cyanus pichleri* (Boiss.) Holub. subsp. *pichleri* - S63, N. Kenar 1551; S15, N. Kenar 1649, Hcrp.  
*Cyanus triumfettii* (All.) Dostál ex Á. Löve & D. Löve - S24, N. Kenar 1577, Hcrp.  
*Echinops ritro* L. - S38, N. Kenar 1262; S12, N. Kenar 1842, Hcrp.  
*Erigeron acris* subsp. *pycnotrichus* (Vierh.) Grierson - S52, N. Kenar 1710, Euro Sib. element, Hcrp.  
*Filago anatolica* (Boiss. & Heldr.) Chrtek. & Holub. - S8, N. Kenar 1150, Ir.-Tur. element, Th.  
*Filago arvensis* L. - S25, N. Kenar 1034, Th.  
*Helichrysum plicatum* DC. subsp. *plicatum* - S57, N. Kenar 1732; S25, N. Kenar 1803, Hcrp.  
*Hieracium lasiochaetum* (Bornm. & Zahn.) Sell & West - S84, N. Kenar 1951, endemic, Hcrp.  
*Hieracium pannosum* Boiss. - S18, N. Kenar 1764, E. Medit. element, Hcrp.  
*Inula montbretiana* DC. - S53, N. Kenar 1281; S52, N. Kenar 1718, Ir.-Tur. element, Hcrp.  
*Jurinella moschus* (Habl.) Bobrov subsp. *moschus* - S11, N. Kenar 1950, Ir.-Tur. element, Hcrp.  
*Lactuca hispida* DC. - S26, N. Kenar 1988, Crp.  
*Lactuca mulgedioides* (Vis. & Pančić) Boiss. & Kotschy ex Boiss. - S26, N. Kenar 1980, Hcrp.  
*Lactuca orientalis* (Boiss.) Soják - S73, N. Kenar 1881, Ir.-Tur. element, Hcrp.  
*Lapsana communis* subsp. *pisidica* (Boiss. & Heldr.) Rech. fil. - S79, N. Kenar 1927, Hcrp.  
*Leontodon asperrimus* (Willd.) J. Ball - S18, N. Kenar 1766; S47, N. Kenar 1700, Ir.-Tur. element, Hcrp.  
*Picnomon acarna* (L.) Cass. - S11, N. Kenar 1922, Medit. element, Th.  
*Pilosella cymosa* (L.) C. H. & F. W. Schultz - S47, N. Kenar 1694, Euro-Sib. element, Hcrp.  
*Pilosella hoppeana* subsp. *cilicica* (Nägeli ex Peter) P. D. Sell & C. West - S59, N. Kenar 1752; S25, N. Kenar 1814, Hcrp.  
*Pilosella hoppeana* subsp. *testimonialis* (Nägeli ex Peter) P. D. Sell & C. West - S69, N. Kenar 1242; S57, N. Kenar 1739, Hcrp.  
*Pilosella piloselloides* subsp. *magyarica* (Peter) S. Bräut. & Greuter - S62, N. Kenar 1861, Hcrp.  
*Ptilostemon afer* subsp. *eburneus* Greuter - S67, N. Kenar 1841, endemic, Hcrp.  
*Scorzonera cana* var. *jaquiniana* (W. Koch) Chamberlain - S88, N. Kenar 1884, Hcrp.  
*Scorzonera cana* var. *alpina* (Boiss.) Chamberlain - S11, N. Kenar 1923, Hcrp.  
*Scorzonera cana* var. *radicosa* (Boiss.) Chamberlain - S89, N. Kenar 1907, Hcrp.  
*Scorzonera cinerea* Boiss. - S11, N. Kenar 1926, Ir.-Tur. element, Hcrp.  
*Scorzonera tomentosa* L. - S59, N. Kenar 1746, endemic, Ir.-Tur. element, Hcrp.  
*Senecio doriiformis* subsp. *orientalis* (Fenzl) Matthews - S21, N. Kenar 2025, Ir.-Tur. element, Hcrp.  
*Senecio pseudo-orientalis* Schischkin - S66, N. Kenar 1966, Ir.-Tur. element, Hcrp.  
*Senecio vernalis* Waldst. & Kit. - S86, N. Kenar 1447; S7, N. Kenar 1524, Th.  
*Solidago virgaurea* L. subsp. *virgaurea* - S60, N. Kenar 1819, Euro-Sib. element, Hcrp.  
*Tanacetum cilicium* (Boiss.) Grierson - S26, N. Kenar 1979, E. Medit. element, Hcrp.  
*Tanacetum parthenium* (L.) Schultz - S62, N. Kenar 1052, Hcrp.  
*Tanacetum polycephalum* subsp. *argyrophyllum* (K. Koch) Podlech - S25, N. Kenar 1807, Ir.-Tur. element, Hcrp.  
*Taraxacum buttleri* Van Soest - S17, N. Kenar 1463; S12, N. Kenar 1500; S12, N. Kenar 1480, Hcrp.  
*Taraxacum serotinum* (Waldst. & Kit.) Poir. - S30, N. Kenar 1948, Hcrp.  
*Taraxacum stevenii* DC. - S11, N. Kenar 1949, Ir.-Tur. element, Hcrp.

*Tragopogon bupthalmoides* (DC.) Boiss. var. *bupthalmoides* - S56, N. Kenar 1496, Ir.-Tur. element, Hcrp.

*Tragopogon porrifolius* var. *longirostris* (Schultz Bip.) Greuter - S83, N. Kenar 1297, S39; N. Kenar 1541, Hcrp.

*Tripleurospermum oreades* (Boiss.) Rech. var. *oreades* - S39, N. Kenar 1539, Crp.

*Tripleurospermum parviflorum* (Willd.) Pobed. - S12, N. Kenar 1499, Th.

*Tripleurospermum sevanense* (Manden) Pobed. - S69, N. Kenar 1231, Crp.

*Xeranthemum annuum* L. - S38, N. Kenar 1255; S47, N. Kenar 1692, Th.

#### OLEACEAE

*Fraxinus angustifolia* Vahl. subsp. *angustifolia* - S79, N. Kenar 1929, Ph.

#### APOCYNACEAE

*Vinca herbacea* Waldst. & Kit. - S8, N. Kenar 1152, Hcrp.

*Vincetoxicum canescens* (Willd.) Decne. subsp. *canescens* - S66, N. Kenar 1968, Hcrp.

*Vincetoxicum fuscatum* (Hornem.) Reichb. subsp. *fuscatum* - S89, N. Kenar 1906, Hcrp.

*Vincetoxicum tmoleum* Boiss. - S37, N. Kenar 1208; S52, N. Kenar 1711, Hcrp.

#### GENTIANACEAE

\**Gentiana septemfida* Pallas - S1, N. Kenar 1828, Hyrcano – Eux. (mt.) element Hcrp.

#### CONVOLVULACEAE

*Convolvulus arvensis* L. - S53, N. Kenar 1276; S18, N. Kenar 1777, Crp.

*Convolvulus galaticus* Rostan ex Choisy - S37, N. Kenar 1222, endemic, Ir.-Tur. element, Crp.

*Convolvulus lineatus* L. - S5, N. Kenar 1669, Hcrp.

#### CUSCUTACEAE

*Cuscuta balansae* Boiss. & Reuter ex Yunck. - S52, N. Kenar 1709, Vp.

#### BORAGINACEAE

*Alkanna orientalis* (L.) Boiss. var. *orientalis* - S7, N. Kenar 1503; S2, N. Kenar 1406; S86, N. Kenar 1448, Ir.-Tur. element, Hcrp.

*Alkanna tinctoria* (L.) Tausch. subsp. *tinctoria* - S22, N. Kenar 1116; S5, N. Kenar 1657, Medit. element.

*Anchusa azurea* Mill. var. *azurea* - S24, N. Kenar 1593, Hcrp.

*Anchusa hybrida* Ten. - S56, N. Kenar 1491; S53, N. Kenar 1279, Medit. element, Hcrp.

*Anchusa leptophylla* Roemer & Schultes subsp. *incana* (Ledeb.) D. F. Chamb. - S18, N. Kenar 1773, Ir.-Tur. element, endemic, Hcrp.

*Buglossoides arvensis* subsp. *sibthorpiana* (Griseb.) R. Fern. - S24, N. Kenar 1590, Hcrp.

*Cerintho minor* subsp. *auriculata* (Ten.) Domac - S24, N. Kenar 1591, Hcrp.

*Cynoglossis chetikiana* subsp. *paphlagonica* (Hausskn. ex Bornm.) - S56, N. Kenar 1495, endemic, Eux. element, Hcrp.

*Echium italicum* L. - S39, N. Kenar 1566, Medit. element, Hcrp.

*Heliotropium europaeum* L. - S38, N. Kenar 1256, Ir.-Tur. element, Th.

*Lappula barbata* (Bieb.) Gürke - S5, N. Kenar 1666; S40, N. Kenar 1788, Ir.-Tur. element, Hcrp.

- Lappula spinocarpos* (Forsskål) Aschers ex O. Kuntze - S12, N. Kenar 1484; S56, N. Kenar 1485, Ir - Tur. element, Th.
- Myosotis alpestris* F. W. Schmidt. subsp. *alpestris* - S33, N. Kenar 1128; S12, N. Kenar 1471, Hcrp.
- Myosotis sicula* Guss. - S39, N. Kenar 1542, Th.
- Onosma aucherana* DC. - S33, N. Kenar 1123, E. Medit. element, Hcrp.
- Onosma bracteosa* Hausskn. & Bornm. - S25, N. Kenar 1811, endemic, Ir.-Tur. element, Hcrp.
- \**Onosma microcarpa* DC. - S79, N. Kenar 1954, Ir.-Tur. element, Hcrp.
- Onosma taurica* Willd. var. *taurica* - S46, N. Kenar 1559, Hcrp.
- Paracaryum longipes* Boiss. - S3, N. Kenar 1914, endemic, Ir.-Tur. element, Hcrp.
- Rochelia disperma* (L. Fil.) C. Koch var. *disperma* - S39, N. Kenar 1545, Th.
- Symphytum brachycalyx* Boiss. - S26, N. Kenar 1985, E. Medit. element, Hcrp.

#### SCROPHULARIACEAE

- Scrophularia striata* Boiss. - S39, N. Kenar 1567, Ir.-Tur. element, Hcrp.
- Scrophularia xanthoglossa* var. *decipiens* (Boiss. & Kotschy) Boiss. - S5, N. Kenar 1654, Ir.-Tur. element, Hcrp.
- Verbascum asperuloides* Hub. - Mor. - S59, N. Kenar 1748; S40, N. Kenar 1799; S47, N. Kenar 1680, Ir.-Tur. element, endemic, Hcrp.
- Verbascum cherianthifolium* Boiss. var. *cherianthifolium* - S62, N. Kenar 1889, Hcrp.
- Verbascum lasianthum* Boiss. ex Bentham - S39, N. Kenar 1565, Hcrp.

#### OROBANCHACEAE

- Bornmuellerantha aucheri* (Boiss.) Rothm. - S90, N. Kenar 2002, Ir.-Tur. element, Th.
- Euphrasia pectinata* Ten. - S57, N. Kenar 1738, Euro-Sib. element, Th.
- Orobanche aegyptiaca* Pers. - S28, N. Kenar 1893; S22, N. Kenar 1112, Vp.
- Orobanche anatolica* Boiss. & Reuter - S59, N. Kenar 1756, Vp.
- Orobanche minor* Sm. - S61, N. Kenar 1888, Vp.
- Pedicularis comosa* var. *acmodonta* (Boiss.) Boiss. - S57, N. Kenar 1744, Hcrp.

#### ACANTHACEAE

- Acanthus hirsutus* Boiss. subsp. *hirsutus* - S63, N. Kenar 2003, Hcrp.

#### LABIATAE

- Ajuga chamaepitys* subsp. *chia* (Schreber) Arcangeli - S9, N. Kenar 1158; S38, N. Kenar 1260, Hcrp.
- Ballota larendana* Boiss. & Heldr. - S69, N. Kenar 1233, endemic, Ir.-Tur. element, Hcrp.
- Clinopodium graveolens* subsp. *rotundifolius* (Pers.) Govaerts - S24, N. Kenar 1582, S51, 16.06.2011, N. Kenar 1612, Th.
- Clinopodium vulgare* subsp. *arundanum* (Boiss.) Nyman - S47, N. Kenar 1681, Hcrp.
- Lallemantia iberica* (Bieb.) Fisch. & Mey. - S5, N. Kenar 1673, Ir.-Tur. element, Th.
- Lamium amplexicaule* L. var. *amplexicaule* - S86, N. Kenar 1449; S20, N. Kenar 1459; S17, N. Kenar 1466; S56, N. Kenar 1486, Euro-Sib. element, Th.
- Lamium garganicum* var. *striatum* (Sm.) Hayek. - S84, N. Kenar 1931, Hcrp.

- Lamium orientale* (Fisch. & Mey.) E. H. L. Krause - S38, N. Kenar 1250; S24, N. Kenar 1578, Ir.-Tur. element, Th.
- Marrubium astracanicum* Jacq. subsp. *astracanicum* - S60, N. Kenar 1817, Hcrp.
- Marrubium globosum* subsp. *globosum* - S51, N. Kenar 1615; S40, N. Kenar 1780, endemic, Ir.-Tur. element, Ch.
- Mentha longifolia* subsp. *thyphoides* (Briq.) Harley - S52, N. Kenar 1712; S68, N. Kenar 1840, Crp.
- Nepeta nuda* subsp. *albiflora* (Boiss.) Gams - S85, N. Kenar 2019, Hcrp.
- Phlomis armeniaca* Willd. - S19, N. Kenar 1189; S8, N. Kenar 1144; S52, N. Kenar 1715, Ir.-Tur. element, Hcrp.
- Phlomis nissolii* L., - S5, N. Kenar 1901, endemic, Ir.-Tur. element, Hcrp.
- Phlomis pungens* var. *hirta* Velen - S32, N. Kenar 1879, Hcrp.
- \**Prunella orientalis* Bornm. - S84, N. Kenar 1998, Medit. element, Hcrp.
- Prunella vulgaris* L. - S52, N. Kenar 1725; S57, N. Kenar 1734, Euro-Sib. element, Hcrp.
- Salvia absconditiflora* (Montbret & Aucher ex. Benth) Greuter & Burdet - S22, N. Kenar 1175, endemic, Ir.-Tur. element, Hcrp.
- Salvia aethiopsis* L. - S38, N. Kenar 1272; S5, N. Kenar 1616, Hcrp.
- \**Salvia pilifera* Montbret & Aucher ex Benth - S70, N. Kenar 1898, Ir.-Tur. element, endemic Hcrp.
- Salvia syriaca* L. - S33, N. Kenar 1126, Ir.-Tur. element, Crp.
- Salvia tomentosa* Mill. - S79, N. Kenar 1952, Medit. element, Hcrp.
- Salvia verticillata* subsp. *amasiaca* (Freyn & Bornm.) Born. - S52, N. Kenar 1729, Ir.-Tur. element, Hcrp.
- Salvia virgata* Jacq. - S77, N. Kenar 1192, Ir.-Tur. element, Hcrp.
- Scutellaria brevibracteata* Stapf subsp. *brevibracteata* - S79, N. Kenar 1928, endemic, E. Medit. element, Hcrp.
- Scutellaria orientalis* subsp. *pinnatifida* Edmondson - S57, N. Kenar 1736, Ch.
- Scutellaria salviifolia* Benth - S9, N. Kenar 1177, endemic, Hcrp.
- Sideritis lanata* L. - S6, N. Kenar 1102; S7, N. Kenar 1509, E. Medit. element, Th.
- Stachys annua* subsp. *annua* var. *lycaonica* Bhattacharjee - S39, N. Kenar 1532, Ir.-Tur. element, Th.
- Stachys balansae* Boiss. & Kotschy - S82, N. Kenar 1909, Hcrp.
- Stachys cretica* subsp. *anatolica* Rech. - S83, N. Kenar 1290; S53, N. Kenar 1284; S13, N. Kenar, 1085; S9, N. Kenar 1167; S5, N. Kenar 1618, endemic, Hcrp.
- Stachys iberica* subsp. *stenostachya* (Boiss.) Rech. - S37, N. Kenar 1218; S38, N. Kenar 1257; S52, N. Kenar 1724, Ir.-Tur. element, Ch.
- Stachys lavandulifolia* Vahl. - S40, N. Kenar 1791, Hcrp.
- Stachys sparsipilosa* Bhattacharjee & Hub. - Mor. - S30, N. Kenar 1953, endemic, E. Medit element, Ch.
- Teucrium chamaedrys* L. subsp. *chamaedrys* - S77, N. Kenar 1191, Euro-Siber. element, Ch.
- Teucrium chamaedrys* subsp. *syspirense* (K. Koch) Rech. - S37, N. Kenar 1214; S57, N. Kenar 1740; S40, N. Kenar 1786, Ir.-Tur. element, Ch.
- Teucrium polium* L. subsp. *polium* - S59, N. Kenar 1751; S40, N. Kenar 1782, Ch.
- Thymus argaeus* Boiss. & Bal - S71, N. Kenar 1047; S18, N. Kenar 1758, endemic, Ir.-Tur. element, Ch.
- Thymus sipyleus* Boiss. - S83, N. Kenar 1292; S40, N. Kenar 1789, Ch.



*Ziziphora capitata* L. - S9, N.Kenar 1118, Th.

*Ziziphora clinopodioides* Lam. - S40, N.Kenar 1243; S25, N. Kenar 1810, Ir.-Tur. element, Ch.

*Ziziphora persica* Bunge - S27, N. Kenar 1933, Ir.-Tur. element, Th.

#### PLUMBAGINACEAE

*Acantholimon acerosum* (Willd.) Boiss. subsp. *acerosum* var. *acerosum* - S18, N. Kenar 1759, Ir.-Tur. element, Ch.

*Acantholimon armenum* var. *balansae* Boiss.- S86, N. Kenar 1452, Ir.-Tur. element, Ch.

*Acantholimon ulicinum* (Willd. ex Schultes) Boiss. var. *ulicinum* - S1, N. Kenar 1836; S18, N. Kenar 1760, Medit. element, Ch.

#### PLANTAGINACEAE

*Globularia trichosantha* Fisch. & Mey. subsp. *trichosantha* - S13, N. Kenar 1090; S12, N. Kenar 1479, Ir.-Tur. element, Hcrp.

*Linaria corifolia* Desf. - S5, N. Kenar 1665, endemic, Ir.-Tur. element, Hcrp.

*Linaria genistifolia* subsp. *polyclada* (Fenzl) Davis - S40, N. Kenar 1793, endemic, Ir.-Tur. element, Hcrp.

*Plantago atrata* Hoppe - S76, N. Kenar 1875, Hcrp.

*Plantago lanceolata* L. - S51, N. Kenar 1606, Hcrp.

*Veronica anagallis* - *aquatica* L. - S1, N. Kenar 1823, Hcrp.

*Veronica balansae* Stroh - S51, N. Kenar 1603, endemic, Medit. element, Th.

*Veronica beccabunga* L. - S1, N. Kenar 1829., Crp.

*Veronica multifida* L. - S45, N. Kenar 1559; S40, N. Kenar 1790, Ir.-Tur. element, Ch.

*Veronica orientalis* subsp. *nimrodii* (Richter ex Stapf.) M. A. Fischer - S12, N. Kenar 1470, endemic?, Ch.

*Veronica polita* Fries. - S39, N. Kenar 1544, Th.

*Veronica thymoides* subsp. *hasandaghensis* M.A. Fischer - S13, N. Kenar 1087; S44, N. Kenar 1048; S12, N. Kenar 1531, Ir.-Tur. element, endemic, Ch.

\**Veronica triloba* Opiz - S34, N. Kenar 1422; S2, N. Kenar 1404, Th.

*Veronica triphyllus* L. - S20, N. Kenar 1460; S2, N. Kenar 1468, Th.

*Veronica verna* L. - S81, N. Kenar 1973, Euro-Sib. element, Th.

#### THYMELAEACEAE

*Daphne oleoides* subsp. *kurdica* (Bornm.) B. Person - S51, N. Kenar 1610, Ir.-Tur. element, Ch.

*Daphne oleoides* Schreber subsp. *oleoides* - S68, N. Kenar 1837; S18, N. Kenar 1776, Ch.

#### SANTALACEAE

*Thesium billardieri* Boiss. - S41, N. Kenar 1872, Ir.-Tur. element, Hcrp.

#### LORANTHACEAE

*Viscum album* L. subsp. *album* - S53, N. Kenar 1274, Vp.

#### EUPHORBIACEAE

*Euphorbia anacampseros* Boiss. var. *anacampseros* - S50, N. Kenar 1436; S34, N. Kenar 1417; S86, N. Kenar 1445, endemic, Hcrp.

*Euphorbia denticulata* Lam. - S68, N. Kenar 2021, Ir.-Tur. element, Hcrp.  
*Euphorbia falcata* subsp. *falcata* var. *galilaea* (Boiss.) Boiss. - S65, N. Kenar 1902, Th.  
*Euphorbia hernariifolia* Willd. var. *hernariifolia* - S30, N. Kenar 1919, Hcrp.  
*Euphorbia macroclada* Boiss. - S19, N. Kenar 1187; S6, N. Kenar 1099; S33, N. Kenar 1121; S5, N. Kenar 1653; S40, N. Kenar 1784, Ir.-Tur. element, Hcrp.

#### URTICACEAE

*Urtica dioica* L. subsp. *dioica* - S18, N. Kenar 1761, Euro-Sib. element, Hcrp.

#### FAGACEAE

*Quercus cerris* L. - S24, N. Kenar 1594, Medit. element, Ph.  
*Quercus ithaburensis* subsp. *macrolepis* (Kotschy) Hedge & Yalt. - S65, N. Kenar 1963, E. Medit element, Ph.  
*Quercus libani* Olivier - S85, N. Kenar 2009, Ir.-Tur. element, Ph.  
*Quercus pubescens* Willd. subsp. *pubescens* - S83, N. Kenar 1293; S22, N. Kenar 1141; S47, N. Kenar 1705, Ph.  
*Quercus trojana* P. B. Webb. - S83, N. Kenar 1291; S47, N. Kenar 1706, E. Medit. element, Ph.  
*Quercus vulcanica* (Boiss. & Heldr.) Kotschy - S21 N. Kenar 2024, endemic. E. Medit. element, Ph.

#### SALICACEAE

*Populus tremula* L. - S74, N. Kenar 1978, Euro-Sib. element, Ph.

#### RUBIACEAE

*Asperula arvensis* L. - S29, N. Kenar 1063; S24, N. Kenar 1583, Th.  
*Asperula stricta* Boiss. subsp. *stricta* - S62, N. Kenar 1887, E. Medit. element, Hcrp.  
*Crucianella disticha* Boiss. - S81, N. Kenar 2034, endemic, Ir.-Tur. element, Th.  
*Cruciata pedemontana* (Bellardi) Ehrend. - S21, N. Kenar 2022, Th.  
*Cruciata taurica* (Pallas ex Willd.) Ehrend. - S72, N. Kenar 1040; S42, N. Kenar 1056; S22, N. Kenar 1134; S43, N. Kenar 1081, Ir.-Tur. element, Ch.  
*Galium incanum* subsp. *elatius* (Boiss.) Ehrend. - S51, N. Kenar 1607; S40, N. Kenar 1787, Ir.-Tur. element, Ch.  
 \**Galium spurium* subsp. *ibicinum* (Boiss. & Hausskn.) Ehrend. - S26, N. Kenar 1986, Ir.-Tur. element, Th.  
*Galium verum* L. subsp. *verum* - S37, N. Kenar 1223; S47, N. Kenar 1699, Euro-Sib. element, Ch.

#### ARACEAE

*Arum rupicola* Boiss. var. *rupicola* - S57, N. Kenar 1843, endemic, Ir.-Tur. element, Crp.  
*Arum rupicola* var. *virescens* (Stapf.) P.C. Boyce - S22, N. Kenar 1106, Ir.-Tur. element, Crp.

#### XANTHORRHOEACEAE

*Asphodeline damascena* (Boiss.) Baker subsp. *damascena* - S40, N. Kenar 1802, Ir.-Tur. element, Crp.

*AMARYLLIDACEAE*

*Allium atroviolaceum* Boiss. - S51, N. Kenar 1597; S46, N. Kenar 1564, Crp.

*Allium schoenoprasum* L. - S4, N. Kenar 2031, Crp.

*Allium scorodoprosium* subsp. *rotundum* (L.) Stearn - S18, N. Kenar 1763; S15, N. Kenar 1644, Crp.

*Allium tauricola* Boiss. - S30, N. Kenar 1917, endemic, Ir.-Tur. element, Crp.

*ASPARAGACEAE*

*Muscari armeniacum* Leichtlin ex Baker - S26, N. Kenar 1976, Crp.

\**Muscari aucheri* (Boiss.) Baker - S13, N. Kenar 1092; S44, N. Kenar 1005, endemic, Crp.

*Muscari caucasicum* (Griseb.) Baker - S49, N. Kenar 1430, Ir.-Tur. element, Crp.

*Ornithogalum oligophyllum* E. D. Clarke - S13, N. Kenar 1094; S44, N. Kenar 1472, Crp.

*Ornithogalum orthophyllum* subsp. *kochii* (Parl.) Maire & Weiller - S15, N. Kenar 1635, Crp.

*Ornithogalum pyrenaicum* L. - S9, N. Kenar 1163; S15, N. Kenar 1634, Crp.

*LILIACEAE*

\**Fritillaria aurea* Schott. - S36, N. Kenar 1844, endemic, Ir.-Tur. element, Crp.

*Colchicum szovitsii* Fisch. & Mey. - S83, N. Kenar 1432, Ir.-Tur. element, Crp.

*Colchicum triphyllum* G. Kunze - S20, N. Kenar 1455, Medit. element, Crp.

*Gagea peduncularis* (J. & C. Presl.) Pascher - S34, N. Kenar 1418; S49, N. Kenar 1467, Medit. element, Crp.

*Gagea villosa* (Bieb.) Duby var. *villosa* - S72, N. Kenar 1020; S44, N. Kenar 1003, Medit. element, Crp.

*IRIDACEAE*

*Crocus ancyrensis* (Herbert) Maw. - S44, N. Kenar 1008; S20, N. Kenar 1454, endemic, Ir.-Tur. element, Crp.

*Iris galatica* Siehe - S50, N. Kenar 1439, endemic, Ir.-Tur. element, Crp.

*ORCHIDACEAE*

*Epipactis helleborine* (L.) Crantz subsp. *helleborine* - S47, N. Kenar 1686, Crp.

*Limodorum abortivum* (L.) Swartz var. *abortivum* - S21, N. Kenar 2020, Crp.

*Orchis mascula* subsp. *pinetorum* (Boiss. & Kotschy) G. Camus - S35, N. Kenar 1067; S91, N. Kenar 1848, E. Medit. element, Crp.

\**Orchis tridentata* Scop. - S91, N. Kenar 1849, Medit. element, Crp.

*JUNCACEAE*

\**Juncus anatolicus* Snog. - S58, N. Kenar 1956, endemic, E. Medit. element, Crp.

*Juncus inflexus* L. - S57, N. Kenar 1742, Hcrp.

*CYPERACEAE*

*Carex divisa* Hudson - S10, N. Kenar 1955, Euro-Sib. element, Crp.

*Carex leersii* F.W. Schultz - S68, N. Kenar 2017, Euro-Sib. element, Crp.

## POACEAE

- Aegilops triuncialis* L. subsp. *triuncialis* - S32, N. Kenar 1895, Th.
- Aegilops umbellulata* Zhukovsky - S5, N. Kenar 1622; S15, N. Kenar 1633, Ir.-Tur. element, Th.
- Agrostis capillaris* L. var. *capillaris* - S84, N. Kenar 2007, Euro-Sib. element, Crp.
- Agrostis stolonifera* L. - S26, N. Kenar 1974, Euro-Sib. element, Hcrp.
- Apera intermedia* Hackel - S70, N. Kenar 1133, Ir.-Tur. element, Th.
- Arrhenatherum palaestinum* Boiss. - S68, N. Kenar 1975, E. Medit. element, Hcrp.
- Briza humilis* M. Bieb. - S66, N. Kenar 1965, Th.
- Bromus japonicus* subsp. *anatolicus* (Boiss. & Heldr.) Pénzes - S31, N. Kenar 1433, Th.
- Bromus scoparius* L. - S10, N. Kenar 1959, Th.
- Bromus tectorum* L. - S6, N. Kenar 1103, Th.
- Bromus tomentellus* Boiss. *tomentellus* - S25, N. Kenar 1806; S51, N. Kenar 1598, Ir.-Tur. Element, Crp.
- Chrysopogon gyrllus* (L.) Trin. subsp. *gyrllus* - S76, N. Kenar 1870 Hcrp.
- Cynosurus cristatus* L. - S10, N. Kenar 1996, Euro-Sib. element, Hcrp.
- Dactylis glomerata* L. subsp. *glomerata* - S61, N. Kenar 1073, Euro-Sib. element, Hcrp.
- Elymus divaricatus* Drbow subsp. *divaricatus* (Boiss. & Bal.) Melderis - S82, N. Kenar 1070, Ir.-Tur. element, endemic, Hcrp.
- Elymus hispidus* subsp. *barbulatus* (Schur) Á. Love - S88, N. Kenar 1886, Crp.
- Elymus hispidus* (Opiz) Melderis subsp. *hispidus* - S41, N. Kenar 1871, Crp.
- \**Elymus tauri* (Boiss. & Bal.) Melderis - S10, N. Kenar 2033, Ir.-Tur. element, Hcrp.
- Festuca callieri* (Hackel ex St. - Yves) F. Markgraf subsp. *callieri* - S27, N. Kenar 1935, Hcrp.
- Festuca valesiaca* Schleicher ex Gaudin - S75, N. Kenar 1054, Hcrp.
- Gaudiniopsis macra* (Bieb.) Eig subsp. *macra* - S26, N. Kenar 1969, Ir.-Tur. element, Th.
- Helictotrichon argaeum* (Boiss.) Parsa - S84, N. Kenar 1957, endemic, Ir.-Tur. element, Hcrp.
- Hordeum bulbosum* L. - S83, N. Kenar 1295; S15, N. Kenar 1639, Crp.
- \**Hordeum brevisubulatum* (Trin.) Link subsp. *violaceum* (Boiss. & Huet.) Tzelev - S58, N. Kenar 1961, Ir.-Tur. element, Ch.
- Hordeum murinum* L. subsp. *glaucum* (Steud.) Tzelev - S7, N. Kenar 1527; S6, N. Kenar 1105; S9, N. Kenar 1171, Th.
- Koeleria macrantha* (Ledeb.) Schult. - S31, N. Kenar 1136., Hcrp.
- Melica ciliata* L. subsp. *ciliata* - S11, N. Kenar 1924, Hcrp.
- Milium vernale* M. Bieb. subsp. *vernale* - S68, N. Kenar 2029, Medit. element, Th.
- Oryzopsis holciformis* (M.Bieb.) Hack. subsp. *holciformis* - S66, N. Kenar 1967, Hcrp.
- Phleum exaratum* Hochst. ex Griseb. subsp. *exaratum* - S52, N. Kenar 1727, Th.
- Phleum montanum* C. Koch subsp. *montanum* - S65, N. Kenar 1904, Hcrp.
- Poa alpina* L. subsp. *fallax* F. Herm. - S30, N. Kenar 1946, Hcrp.
- Poa angustifolia* L. - S27, N. Kenar 1934, Hcrp.
- Poa bulbosa* L. - S63, N. Kenar 2006, Hcrp.
- Poa pratensis* L. - S68, N. Kenar 1977, Hcrp.
- Secale anatolicum* Boiss. - S21, N. Kenar 2026, Hcrp.
- Stipa holosericea* Trin. - S41, N. Kenar 1108, Ir.-Tur. element, Hcrp.
- Stipa pulcherrima* subsp. *crassiculmis* (P. Smirnov) Tzvelev - S57, N. Kenar 1741, Hcrp.

*Taeniatherum caput - medusae* subsp. *crinitum* (Schreber) Melderis - S31, N. Kenar 1465, Ir.-Tur. element, Th.  
*Trisetum flavescens* (L.) P. Beauv. - S82, N. Kenar 1910, Euro-Sib. element, Hcrp.  
 \**Triticum baeoticum* Boiss. - S79, N. Kenar 1960, Th.

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### References

- Akçiçek, E. 2009: Flora of Kumalar Mountain (Afyon). – Turkish J. of Bot. **27**: 383-420.
- Akman, Y., Quezel, P., Aydoğdu, M., Ketenoglu, O., Kurt, L. & Evren, H. 1994: A phytosociological research on the stepe vegetation of the Yapraklı Mountains (Çankırı, Turkey). – Ecol. Medit. **20**: 1-7.
- Akman, Y. 1999: Climate and bioclimate. – Ankara.
- , Ketenoglu, O. & Kurt, F. 2000: Vegetation ecology and research methods. – Ankara.
- Altın, B. T. 2008: The effects of wrong land-use on distribution of vegetation at Mt. Keçiboyduran and Mt. Melendiz. – Turkish J. Geogr. **51**: 13-32.
- Anonymous, 2009: Environment situation report of Niğde in 2008. – Niğde.
- Atalay, I. 2002: Mountains ecosystems of Turkey. – Bishkek: Abstract of papers, 7<sup>th</sup> International Symposium on High Remote Sensing of Cartography (HMRSC VII).
- Avcı, M. 2005: Diversity and endemism in Turkey's vegetation. – Istanbul Univ. Fac. Letters Dep. Geogr. J. Geogr. **13**: 27-55.
- Bağcı, Y. 1998: Flora of Aladağlar (The region between Zamantı River - Yahyalı, Kayseri). – PhD Thesis Selçuk Univ.
- , Dural, H. & Savran, A. 1998: New floristic records for squares B5 and C5 from Turkey. – Herb. J. Syst. Bot. **5**: 71-78.
- Başköse, I. & Dural, H. 2011: The Flora of Hasan (Aksaray Region, Turkey) Mountain. – BioDiCon **4**: 125-148.
- Baysal, A. 2003: Syntaxonomical analysis of the stepe vegetation in the region among Aksaray - Niğde and Kırşehir. – PhD Thesis, Ankara University.
- Beekman, P.H. 1966: Pliocene and quaternary volcanism in the Hasan Dağ - Melendiz Dağ region. – Ankara.
- Bozok, F. & Aksoy, A. 2013: Flora of Hodul Mountain (Nevşehir - Kayseri) and its surroundings. – Erciyes Univ. J. Inst. Sci. **29**: 10-28.
- Davis, P.H. (ed.) 1965–1985: Flora of Turkey and the East Aegean Islands, **1-9**. – Edinburgh.
- , Mill, R.R. & Tan, K. (ed.) 1988: Flora of Turkey and the East Aegean Islands, **10**. – Edinburgh.
- Ekim, T., Koyuncu, M., Vural, M., Duman, H., Aytaç, Z. & Adıgüzel, N. (eds.) 2000: Red Data Book of Turkish Plants. – Ankara.
- Ercan, T. 1985: Cenozoic Volcanism in Central Anatolia. – Ankara.
- Eyece, B. & Ocakverdi, H. 1987: Contributions to the flora of Melendiz Mountains (Niğde) I. (Doğa) – Turkish J. Bot. **11**: 241-255.
- 1987: Contributions to the flora of Melendiz Mountains (Niğde) II. – J. Sci. Fac. Arts Sci. Selçuk Univ. **6**: 111-138.

- Fıncıoğlu, H.K., Seefeldt, S.S, Şahin, B., Vural, M. 2009: Assessment of grazing effect on sheep Fescue (*Festuca valesiaca*) dominated steppe rangelands, in the semi-arid Central Anatolian region of Turkey. – *J. Arid Environ.* **73(12)**: 1149-1157.
- Güner, A., Özhatay, N., Ekim, T. & Başer, K.H.C. (eds). 2000: Flora of Turkey and the East Aegean Islands, **11**. – Edinburgh.
- , Aslan, S., Ekim, T., Vural, M. & Babaç, M.T. (eds.). 2012: Türkiye Bitkileri Listesi (Damarlı Bitkileri) [The Checklist of the Flora of Turkey (Vascular Plants)]. Nezahat Gokyigit Botanik Bahçesi ve Flora Araştırmaları Derneği Yayını. – İstanbul.
- Hamzaoğlu, E. 1996: Flora of Kervansaray Mountain (Kırşehir). – *Ot Sist. Bot. Dergisi* **3**: 1-24.
- Haston, E., Richardson, J.E., Stevens P.F., Chase, M.W. & Harris D.J. 2009: The Linear Angiosperm Phylogeny Group (LAPG) III: A linear sequence of the families in APG III. – *Bot. J. Linn. Soc.* **161**: 128-131. doi:10.1111/j.1095-8339.2009.01000.x
- IUCN, 2001: IUCN Red List Categories and Criteria: Version 3.1. – Gland.
- Kurt, L., Tuğ, G.N. & Ketenoğlu, O. 2006: Synoptic view of the steppe vegetation of Central Anatolia. – *Asian J. Bot.* **5**: 733-739.
- Martin, E. & Aydoğdu, M. 2005: Flora of the region between Niğde and Ulukışla. – *Ot Sist. Bot. Dergisi* **12**: 73-92.
- Orcan, N. & Yaylahoğlu, E. 2000: New floristic records for squares C5. – *Ot Sist. Bot. Dergisi* **7**: 83-87.
- Podlech, D. & Zarre, Sh. (with collaboration of Ekici, M., Maassoumi, A. A. & Sytin, A.). 2013: A taxonomic revision of the genus *Astragalus* L. (*Leguminosae*) in the Old World, **1-3**. – Wien.
- Reveal, J.L. & Chase, M.W. 2011: APG III: Bibliographical Information and Synonymy of *Magnoliidae*. – *Phytotaxa* **19**: 71-134.
- Savran, A., Dural, H. & Bağcı, Y. 1997: New floristic records for squares C5 in the flora of Turkey. – *Ot Sist. Bot. Dergisi* **4**: 87-94.
- , — & — 1999: New floristic records for squares C5 in the flora of Turkey. – *Ot Sist. Bot. Dergisi* **6**: 67-74.
- Vural, M., Karavelioğulları, F.A. & Polat, H. 1997: New floristic records for squares B5 (Nevşehir, Kırşehir). – *Ot Sist. Bot. Dergisi* **4**: 61-70.
- Takhtajan, A. 1986: Floristic Regions of the World. – Berkeley.
- Ünal, A. & Ocakverdi, H. 1991: Plants of Karadağ (Karaman). – *Turkish J. Bot.* **15**: 380-399.
- Vural, C. & Aytaç, Z. 2005: The flora of Erciyes Dağı (Kayseri). – *Turkish J. Bot.* **29**: 185-236.

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