

1-1-2003

## The Flora of Agricultural Areas and Their Environs in Çanakkale (Lapseki-Ezine)

İSMET UYSAL

ERSİN KARABACAK

ÖZCAN SEÇMEN

SEVİL OLDACAY

Follow this and additional works at: <https://journals.tubitak.gov.tr/botany>



Part of the [Botany Commons](#)

---

### Recommended Citation

UYSAL, İSMET; KARABACAK, ERSİN; SEÇMEN, ÖZCAN; and OLDACAY, SEVİL (2003) "The Flora of Agricultural Areas and Their Environs in Çanakkale (Lapseki-Ezine)," *Turkish Journal of Botany*. Vol. 27: No. 2, Article 5. Available at: <https://journals.tubitak.gov.tr/botany/vol27/iss2/5>

This Article is brought to you for free and open access by TÜBİTAK Academic Journals. It has been accepted for inclusion in Turkish Journal of Botany by an authorized editor of TÜBİTAK Academic Journals. For more information, please contact [academic.publications@tubitak.gov.tr](mailto:academic.publications@tubitak.gov.tr).

# The Flora of Agricultural Areas and Their Environs in Çanakkale (Lapseki-Ezine)

İsmet UYSAL, Ersin KARABACAK

Çanakkale Onsekiz Mart University, Faculty of Sciences and Arts, Department of Biology, Çanakkale - TURKEY

Özcan SEÇMEN

Ege University, Faculty of Sciences, Department of Biology, İzmir - TURKEY

Sevil OLDACAY

Çanakkale Onsekiz Mart University, College for Health Services, Çanakkale - TURKEY

Received: 24.01.2002

Accepted: 27.09.2002

**Abstract:** This work was carried out in the agricultural areas of Çanakkale (Lapseki-Ezine) and environs between 1999 and 2001. The study area is suitable for plant species richness because of its microclimate, soil and intensive agricultural activities. A total taxa of 267 were identified belonging to *Pteridophyta* (one taxon), *Gymnospermae* (four taxa) and *Angiospermae* (262 taxa). Of these, 205 taxa of *Angiospermae* are in *Magnoliopsida* and 57 taxa of *Liliopsida*. The phytogeographical spectrums of taxa are as follows: Mediterranean elements, 61 taxa (22.8%); East-Mediterranean elements, 20 taxa (7.5%); Euro-Siberian elements, 15 taxa (5.6%); and Irano-Turanian elements, five taxa (1.9%). The results show that five taxa are endemics.

**Key Words:** Çanakkale, agricultural areas, flora

## Çanakkale (Lapseki ve Ezine) Civarındaki Tarım Alanları ve Çevresinin Florası

**Özet:** Bu araştırma 1999-2001 yılları arasında Çanakkale civarı (Lapseki-Ezine) tarım alanlarında gerçekleştirilmiştir. Araştırma sahası yoğun tarımsal faaliyetlerin yanında mikroklima ve toprak yapısı yönüyle tür zenginliğine elverişli özelliklere sahiptir. *Pteridophyta*'dan 1, *Gymnospermae*'den 4 ve *Angiospermae*'den 262 takson olmak üzere toplam 267 bitki taksonu teşhis edilmiştir. *Angiospermae*'den 205 takson *Magnoliopsida*'ya, 57 takson da *Liliopsida*'ya aittir. Taksonların fitocoğrafik bölgelere göre dağılımı sırasıyla: Akdeniz elemanları, 61 takson (% 22.8); Doğu-Akdeniz elemanları, 20 takson (% 7.5); Avrupa-Sibirya elemanları, 15 takson (% 5.6); İran-Turan elemanları, 5 takson (% 1.9) şeklindedir. Sonuçlara göre 5 takson endemiktir.

**Anahtar Sözcükler:** Çanakkale, ziraat alanları, flora

## Introduction

Agricultural areas occupy a considerable portion of Çanakkale province. Among the various plants growing in these fields weeds decrease production, as they compete for nutrients, light, water etc. with the crop plant, and the ratio of yield loss is 14.7% (Cramer, 1967). Weed management requires the investigation of the flora of agricultural areas. There are examples of such studies in many parts of Turkey: Bilgin (1965) in the Aegean region, Civelek et al. (1996) in Elazığ province, Kireç & Yarcı (1999) in Edirne province, Boz (2000) in Aydın province, Kaya & Zengin (2000) in Pasinler plain, Okşar & Uygur (2000) in Çukurova, and Boz et al. (2000) in

Denizli province; but no study has been performed in Çanakkale province.

The aim of our study was to contribute to the literature on the flora of Turkey and provide data on weed content through determination of the flora of agricultural areas.

Çanakkale is situated in the Marmara region of Turkey. Davis (1965) included this region in grid-square A1 (A,E) and B1. It has a Mediterranean climate with an average temperature of 14.8 °C, the highest average temperature being 30.8 °C and the lowest 3.1 °C, and annual precipitation of 615 mm (Anonymous, 1999). The precipitation regime is typical Mediterranean type with

rainy winters. The soils are generally alluvial regasol, brown forest, non-calcareous brown forest, vertisol, and non-calcareous brown type (Atalay, 1989). The dominant soil group is non-calcareous originating from conglomerate, flysch, sandstone and limestone rocks.

The study area is located in grid-squares A1(A) and B1 (Lapseki and Ezine) by Davis, and lies by the Dardanelles (Figure 1).

The general vegetation consists of macchie and pseudomacchie and the dominant species is *Quercus coccifera* L. Bush formations containing *Quercus* species, *Phillyrea latifolia* L., *Juniperus oxycedrus* L. subsp. *oxycedrus*, *Rosa sempervirens* L., *Paliurus spina-christi* Mill., *Cistus creticus* L., *Arbutus andrachne* L., *Prunus*

*spinosa* L., *Rubus sanctus* Schreb., *Sarcopoterium spinosum* (L.) Spach, *Pyrus elaeagnifolia* Pall. subsp. *elaegnifolia*, and *Styrax officinalis* L. can be found locally. Meadow plants are distributed in open areas. There are many aquatic taxa in wet areas.

The study area mainly consists of agricultural areas. The total agricultural area in Çanakkale (Lapseki and Ezine) and its surroundings is about 196,348 ha. Of these, wheat field areas are 25,630 ha, cotton field areas are 1783 ha, olive grove areas are 22,562 ha, vineyard areas are 1950 ha and fruit-garden areas are 14,423 ha. The crop plants of the area include sunflower, pepper, cucumber, tomato, melon, watermelon, onion, broadbean, bean and chickpea (Anonymous, 2000).

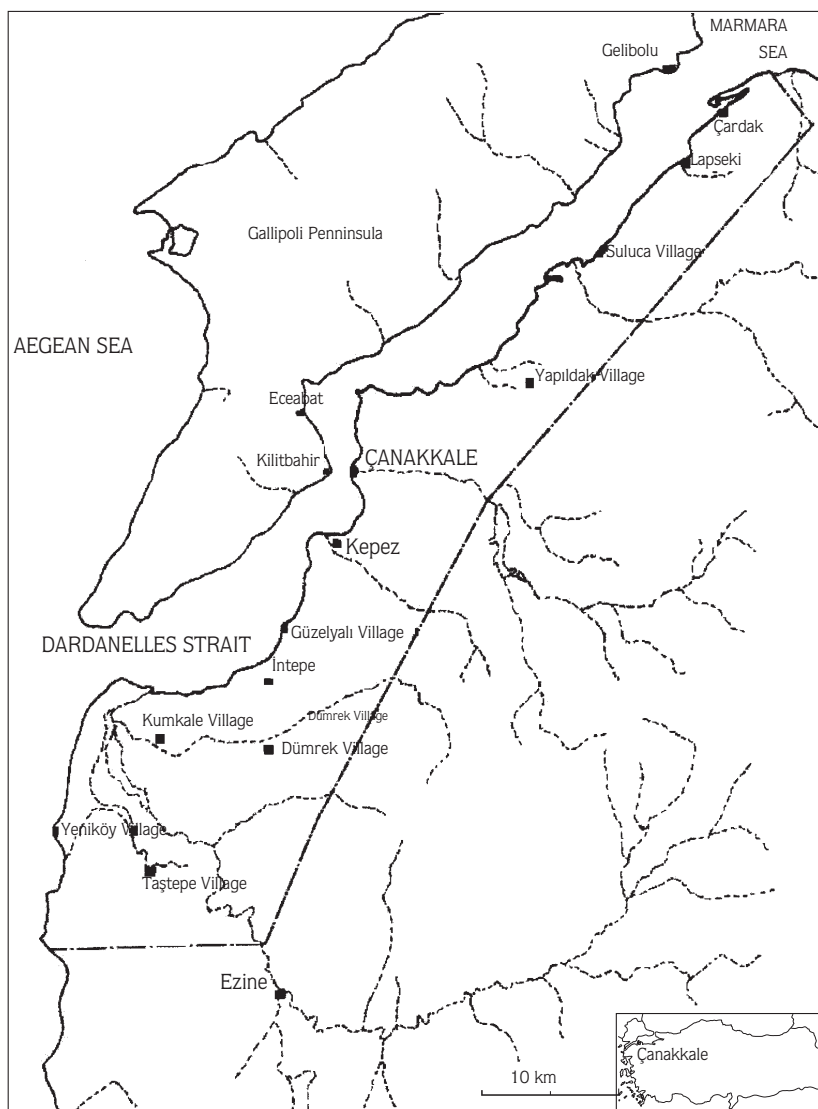


Figure 1. Location of the study area.

## Materials and Methods

Research material was collected from agricultural areas and their environs between Lapseki and Ezine in 1999-2001. The plant samples were collected during different vegetation periods and then dried using standard herbarium methods. Samples were identified following "Flora of Turkey and the East Aegean Islands" (Davis, 1965-1988) and "Flora Europea" (Heywood, 1963-1980). Ege University Herbarium (EGE) specimens were used for comparison when an identification problem arose. Voucher specimens are kept in the Herbarium of the Faculty of Sciences and Arts, Çanakkale Onsekiz Mart University.

The flora list follows the sequence of Pteridophyta, Gymnospermae (*Magnoliopsida* and *Liliopsida*). After the scientific name of every species in the list, the geographical location, habitat, collection date, collector acronym by İ. Uysal (Uys.), collection number and phytogeographical region as known are stated. The phytogeographical regions mentioned in the text are abbreviated as follows: Euro-Sib.: Euro-Siberian; Medit.: Mediterranean; E. Medit.: East-Mediterranean; Ir.-Tur.: Irano-Turanian.

The IUCN threat categories of the plant taxa were scanned in the "Red Data Book of Turkish Plants" (Ekim et al., 2000).

## Results and Discussion

A total of 267 taxa belonging to 62 families were determined in this study (see appendix). The list of taxa prepared on an alphabetical family basis following Davis (1965-1988) is given below. The families including the highest number of taxa are *Poaceae* (13.51%), *Asteraceae* (12.79%), *Fabaceae* (10.43%), *Apiaceae* (5.41%), *Brassicaceae* (5.02%), *Liliaceae* (3.86%), *Boraginaceae* (2.25%) and *Lamiaceae* (2.25%). A comparison of our findings with those of Kireç & Yarcı (1999) is given (Table 1).

Table 1 shows that the results of our study are in broad agreement with those of the other study. While *Poaceae*, *Asteraceae* and *Apiaceae* included a much larger number of taxa, *Fabaceae*, *Brassicaceae* and *Liliaceae* included a smaller number. However, the family *Brassicaceae* included few taxa. Differences in several taxa, as seen in Table 1, might be the result of dissimilarities in local habitats.

Table 1. Comparison of the proportions of some families.

Families	Uysal et al. (%)	Kireç & Yarcı (%)
<i>Poaceae</i>	13.51	10.00
<i>Asteraceae</i>	12.79	9.33
<i>Fabaceae</i>	10.43	12.00
<i>Apiaceae</i>	5.41	3.33
<i>Brassicaceae</i>	5.02	12.00
<i>Liliaceae</i>	3.86	5.33

There are five endemic taxa among the taxa determined in this study: *Acanthus hirsutus* Boiss., *Aristolochia hirta* L., *Ballota nigra* L. subsp. *anatolica* P.H.Davis, *Scabiosa reuteriana* Boiss., and the *Stachys cretica* L. subsp. *anatolica* Rech.f. According to the Red Data Book of Turkish Plants (Ekim et al., 2000) these taxa are lower risk and the endemism rate is 1.87%. Two of these endemic taxa are E. Medit. elements, one is a Euro-Sib. element, one is a Ir.-Tur. element and one is unknown. The ratio of endemism is low.

Phytogeographical origins and ratios of some known taxa are given below (Table 2).

As shown in Table 2, Mediterranean origin are the largest group. This is a rather predictable result since the study area has a typical Mediterranean climate providing suitable growing conditions for Mediterranean elements. Euro-Siberian elements form the second largest group within the taxa. This might be a result of the humid and rainy climate in the study area. In addition, Irano-Turanian elements appear to be the third largest group, indicating that the study area is also locally under the influence of the hard continental climate.

Table 2. Phytogeographical origins and numbers and proportions of some known taxa.

Phytogeographical elements	Number of Taxa	%
Mediterranean	61	22.8
East-Mediterranean	20	7.5
Euro-Siberian	15	5.6
Irano-Turanian	5	1.9
Unknown	166	62.2

Phytogeographically unknown taxa had the highest percentage in total number of taxa (62.2%) and the unknown taxa were mostly weed species.

The proportions of some genera which included the highest number of taxa based on the data obtained from our study are compared to a similar study in a nearby area (Edirne) in Table 3.

Table 3. Comparison of the proportions of some genera.

Genera	Uysal et al. (%)	Kireç & Yarcı (%)
Trifolium	3.75	4.00
Bromus	3.00	0.66
Anthemis	2.25	0.66
Vicia	1.88	4.66
Aegilops	1.50	0.00
Ranunculus	1.50	2.00
Plantago	1.12	1.33
Galium	1.12	1.33

Table 3 shows that the results of this study are in broad agreement with those of the other study. Differences in *Bromus*, *Anthemis*, *Vicia* and *Aegilops* taxa, as seen in Table 3, might be the result of dissimilarities in local habitats.

Since this study was carried out in various crop fields and the areas next to them (i.e. wheat fields those of the, olive groves, fruit gardens, dirt tracks between fields,

vineyards, fallow fields and cotton fields), dissimilarities between our data and those of Kireç & Yarcı (1999) who studied sunflower, beet, watermelon, rice, corn, squash, tomato, been fields, are to be expected.

A total of 267 taxa were determined in the fields and the distribution of these taxa regarding the types of fields is as follows: 22 taxa in olive groves and wheat fields, 67 taxa on dirt tracks between fields, 49 taxa in wheat fields, 42 taxa in fruit gardens, 33 taxa in vineyards, 128 taxa in olive groves, 20 taxa in fallow fields, and 21 taxa in cotton fields.

Species like *Pinus brutia*, *Quercus* spp. and *Juniperus oxycedrus* that were observed around the olive groves and dirt tracks between fields remained after forest destruction.

Consequently, this study suggests that such field studies should be planned in future covering the other parts of the Marmara region in order to contribute to floristic studies as well as helping agronomists and farmers in weed control.

### Acknowledgements

The financial support for this research provided by the Research Foundation of Çanakkale Onsekiz Mart University (COMU-99/13) is gratefully acknowledged. We would like to thank Prof. Dr. Hayri DUMAN (Gazi University) who examined the specimens and confirmed their identification.

### References

- Anonymous (1999). *Ortalama, Ekstrem Sıcaklık ve Yağış Değerleri Bülteni*. Ankara: T.C. Başbakanlık Devlet Meteoroloji İşleri Genel Müdürlüğü.
- Anonymous (2000). *Çanakkale Tarım İl Müdürlüğü Yıllık Değerlendirme Raporu*.
- Atalay İ (1989). *Toprak Coğrafyası*. İzmir: Ege Üniversitesi, Edebiyat Fakültesi Yayınları No: 8.
- Bilgin S (1965). Ege Bölgesi Hububat Tarlalarında Görülen Önemli Yabancıotlar ve Savaş İmkanları Üzerinde Bazı İncelemeler. *Publication of the Ministry of Agriculture, Bornova Plant Protection Research Institute, Technical Bulletin* 14: 45-60.
- Boz Ö (2000). Aydın İli Pamuk Ekim Tarlalarındaki Yabancıotların Yaygınlık ve Yoğunluklarının Saptanması. Adana: *Türkiye Herboloji Derg* 3(1): 10-17.
- Boz Ö, Doğan MN & Dura S (2000). Denizli İli Buğday Ekim Alanlarındaki Yabancıotların ve Yoğunluklarının Saptanması. Adana: *Türkiye Herboloji Derg* 3(1): 37-52.
- Brummitt RK & Powell CE (1992). *Authors of Plant Names*. London: Royal Botanic Gardens, Kew. 1-732 pp.
- Civelek S, Kirbağ S & Parlak Y (1996). Elazığ İli Tarlalarındaki Yabancıotlar ve Yoğunluklarının Tespiti. Elazığ: *Firat Üniv Fen ve Müh Bil Derg* 8(1): 53-68.
- Cramer HH (1967). *Plant Protection and World Protection*, JH Edwards Pub. 524.
- Davis PH (1965-1985). *Flora of Turkey and the East Aegean Islands*. Vol. 1-9. Edinburgh: Edinburgh Univ. Press.
- Davis PH et al. (1988). *Flora of Turkey and the East Aegean Islands (Supplement)*. Vol. 10. Edinburgh: Edinburgh Univ. Press.

Ekim T, Koyuncu M, Vural M, Duman H, Aytaç Z & Adıgüzel N (2000) *Türkiye Bitkileri Kırmızı Kitabı*. Ankara: Türkiye Tabiatını Koruma Derneği.

Heywood VH & Tutin GT (1963-1980). *Flora Europaea, Cambridge*: Vol. 1-5.

Kaya Y & Zengin H (2000). Pasinler Ovasındaki Buğday Tarlalarında Sorun Oluşturan Yabancıotlarla Rastlama Sıklıkları, Hayat Formları ve Fitocoğrafik Bölgelerinin Belirlenmesi. Adana: *Türkiye Herboloji Derg* 3(1): 17-27.

Kireç M & Yarcı C (1999). The Flora of the Agricultural Areas in Enez (Edirne) and Environs. *Türk J Bot* 23: 53-62.

Okşar M & Uygur S (2000). Çukurova'daki Yabancıotlar ve Bunların Mücadele Olanakları. Adana: *Türkiye Herboloji Derg* 3(1): 27-37.

## Appendix

### PTERIDOPHYTA

### EQUISETACEAE

*Equisetum ramosissimum* Desf.

Çardak town, vineyard, wet places, 5 m, 29.05.1999, Uys.12.

### GYMNOSPERMAE

### CUPRESSACEAE

*Juniperus oxycedrus* L. subsp. *oxycedrus*

Dümrek village, olive grove, fieldside, 60 m, 05.06.1999, Uys. 290.

Medit. element.

### EPHEDRACEAE

*Ephedra campylopoda* C.A.Mey.

Taştepe village, beside olive grove, 30 m, 30.06.2001, Uys. 482.

E. major Host

Dümrek village, olive grove, fieldside, 60 m, 05.06.1999, Uys. 295.

Medit. element.

### PINACEAE

*Pinus brutia* Ten.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Observation.

E. Medit. element.

### ANGIOSPERMAE

### MAGNOLIOPSIDA

### ACANTHACEAE

*Acanthus hirsutus* Boiss.

Yapıldak village, wheat field, 50 m, 25.05.1999, Uys. 35; Yapıldak village, dirt track between fields, 50 m, 25.05.1999, Uys. 117.

Endemic. LR (Ic).

### AMARANTHACEAE

*Amaranthus retroflexus* L.

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 482.

### ANACARDIACEAE

*Pistacia terebinthus* L. subsp. *terebinthus*

Yapıldak village, dirt track between fields, 50 m, 25.05.1999, Uys. 120; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 296.

E. Medit. element.

### APIACEAE

*Ammi visnaga* (L.) Lam.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 392; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 471.

Medit. element.

*Bupleurum odontites* L.

Yapıldak village, dirt track between fields, 50 m, 25.05.1999, Uys. 129; Çardak town, vineyard, 5 m, 25.05.1999, Uys. 209.

E. Medit. element.

*Caucalis platycarpus* L.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 251; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 325.

*Conium maculatum* L.

Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 461.

*Daucus carota* L.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 394.

*Echinophora tenuifolia* L. subsp. *sibthorpiana* (Guss.) Tutin

Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 340.

Ir.-Tur. element.

*Eryngium campestre* L. var. *virens* Link

Yapıldak village, dirt track between fields, 50 m, 25.05.1999, Uys. 109; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 220.

*Ferula communis* L. subsp. *communis*

Yeniköy village, beside olive grove, 10 m, 05.06.1999, Uys. 315.

Medit. element.

*Lagoecia cuminoides* L.

Yapıldak village, wheat fieldside, 50 m, 25.05.1999, Uys. 12; Yapıldak village, dirt track between fields, 50 m, 25.05.1999, Uys. 70; Yapıldak village, fallow field, 50 m, 25.05.1999, Uys. 138; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 287.

Medit. element.

*Oenanthe aquatica* (L.) Poir.

Suluca village, fruit garden, edge of watering pool, 2 m, 25.05.1999, Uys. 154.

*O. silaifolia* M.Bieb.

Yapıldak village, dirt track between fields, 50 m, 25.05.1999, Uys. 85.

*Orlaya daucooides* (L.) Greuter

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 257.

Medit. element.

*Pastinaca sativa* L. subsp. *urens* (Req. ex Godr.) Celak.

Yapıldak village, wheat fieldside, 50 m, 25.05.1999, Uys. 23; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 337.

*Torilis arvensis* (Huds.) Link subsp. *purpurea* (Ten.) Hayek

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 250; Taştepe village, olive grove, 30 m, 30.06.2001, Uys. 479.

Medit. element.

#### ARISTOLOCHIACEAE

##### *Aristolochia hirta* L.

Yapıldak village, fallow field, 50 m, 25.05.1999, Uys. 146.

Endemic, E. Medit. Element, LR (lc).

#### ASTERACEAE

##### *Anthemis altissima* L.

Yapıldak village, wheat fieldside, 50 m, 25.05.1999, Uys. 19; Çardak town, vineyard, 5 m, 25.05.1999, Uys. 184.

##### *A. auriculata* Boiss.

Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 321.

E. Medit. element.

##### *A. coelopoda* Boiss. var. *coelopoda*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 273.

##### *A. cotula* L.

Suluca village, fruit garden, 2 m, 25.05.1999, Uys. 166; 23.05.200, Uys. 456.

*A. cretica* L. subsp. *tenuiloba* (DC.) Grierson

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 266.

*A. pectinata* (Bory & Chaub.) Boiss. & Reut. var. *pectinata*

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 45; Uys. 46.

E. Medit. element.

##### *Bellis perennis* L.

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 350.

Euro-Sib. element.

*Carduus nutans* L. subsp. *leiophyllus* (Petr.) Stoj. & Stef.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 292.

*C. pycnocephalus* L. subsp. *arabicus* (Jacq. ex Murray) Nyman

Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 130.

*Centaurea iberica* Trevir. ex Spreng.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 414; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 436.

##### *C. solstitialis* L. subsp. *solstitialis*

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 24; Uys. 29; Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 41; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 331.

##### *Chondrilla juncea* L. var. *juncea*

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 442; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 460.

##### *Cichorium intybus* L.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 57.

*Cirsium arvense* (L.) Scop. subsp. *arvense*

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 55; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 267a; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 334.

##### *C. italicum* (Savi) DC.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 286.

Medit. element.

##### *Cnicus benedictus* L. var. *benedictus*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 277.

*Crepis foetida* L. subsp. *commutata* (Spreng.) Babc.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 22; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 102; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 143; Dümrek village, olive grove, 05.06.1999, 60 m, Uys. 307.

##### *C. zacintha* (L.) Babc.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 101

Medit. element.

##### *Filago pyramidata* L.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 255; Uys. 267b; Uys. 308b.

*Helminthotheca echioides* (L.) Holub

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 40; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 177.

##### *Hyoseris radiata* L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 105.

Medit. element.

##### *Inula graveolens* (L.) Desf.

Dümrek village, olive grove, 60 m, 05.11.2000, Uys. 493.

Medit. element.

##### *Notobasis syriaca* (L.) Cass.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 34.

Medit. element.

##### *Pallenis spinosa* (L.) Cass.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 30; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 114; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 291.

Medit. element.

##### *Picnomon acarna* (L.) Cass.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 110; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 297.

Medit. element.

##### *Picris altissima* Delile

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 197.

Medit. element.

*Rhagadiolus stellatus* (L.) Gaertn. var. *stellatus*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 262.

Medit. element.

##### *Senecio vulgaris* L.

Yapıldak village, wheat field, 50, 29.05.1999, Uys. 56; Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 479.

*Sonchus asper* (L.) Hill subsp. *glaucescens* (Jord.) Ball

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 167.

*Taraxacum serotinum* (Waldst. & Kit.) Poir.

Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 141.

*Tragopogon longirostris* Bisch. ex Sch.Bip. var. *longirostris*

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 28; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 293.

*Xanthium spinosum* L.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 33; Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 484.

*X. strumarium* L. subsp. *cavanillesii* (Schouw) D.Löve & Dans.

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 485.

#### BERBERIDACEAE

*Leontice leontopetalum* L. subsp. *leontopetalum*

Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 426.

#### BORAGINACEAE

*Anchusa azurea* Mill. var. *azurea*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 277a; Uys. 306; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 318.

*Echium angustifolium* Mill.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 107; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 446.

E. *Medit. element.*

*E. italicum* L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 155.

*Medit. element.*

*Heliotropium supinum* L.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 407; Taştepe village, cotton field, 30 m, 08.11.2000, Uys. 489.

*Mysotis ramosissima* Rochel ex Schult. subsp. *ramosissima*

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 357.

*Nonea ventricosa* (Sm.) Griseb.

Çardak town, vineyard, 5 m, 12.03.2000, Uys. 386.

*Medit. element.*

#### BRASSICACEAE

*Alyssum murale* Waldst. & Kit. subsp. *murale* var. *murale*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 258.

*Calepina irregularis* (Asso) Thell.

Çardak town, vineyard, 5 m, 12.03.2000, Uys. 385.

*Capsella bursa-pastoris* (L.) Medik.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 412.

*Cosmopolitan.*

*Cardamine graeca* L.

Dümrek village, olive grove, 60 m, 12.03.2000, Uys. 371.

*Cardaria draba* (L.) Desv. subsp. *draba*

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 27; Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 428; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 470.

*Clypeola jonthlaspi* L.

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 355.

*Coronopus squamatus* (Forssk.) Asch.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 74.

*Erophila verna* (L.) Chevall. subsp. *spathulata* (Láng) Walters

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 356.

*E. verna* (L.) Chevall. subsp. *verna*

Dümrek village, olive grove, 60 m, 23.05.2000, Uys. 370; Taştepe village, cotton field, 30 m, 12.03.2000, Uys. 380.

*Hirschfeldia incana* (L.) Lagr.-Foss.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 241; Uys. 243; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 329.

*Raphanus raphanistrum* L.

Yapıldak village, wheat fieldside, 50 m,

29.05.1999, Uys. 11; Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 38; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 317.

*Rapistrum rugosum* (L.) All.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 39; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 82; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 242; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 333; Uys. 335.

*Sinapis alba* L.

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 490.

*S. arvensis* L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 10; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 112.

*Thlaspi perfoliatum* L.

Dümrek village, olive grove, 60 m, 12.03.2000, Uys. 369.

#### CAMPANULACEAE

*Legousia pentagonia* (L.) Thell.

Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 439.

*E. Medit. element.*

#### CAPRIFOLIACEAE

*Lonicera etrusca* Santi var. *etrusca*

Dümrek village, olive grove and wheat field, on field hedges, 60 m, 23.05.2000, Uys. 423.

*Medit. element.*

#### CARYOPHYLLACEAE

*Agrostema githago* L.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 400.

*Medit. element.*

*Petrorhagia velutina* (Guss.) Ball & Heywood

Dümrek Villge, olive grove and wheat field, stony places at side, 60 m, 23.05.2000, Uys. 401.

*Silene italica* (L.) Pers.

Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 445.



*S. vulgaris* (Moench) Garcke var. *vulgaris*

Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 464.

#### CHENOPODIACEAE

*Chenopodium album* L. subsp. *album* var. *album*

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 483.

#### CISTACEAE

*Cistus creticus* L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 113; Dümrek village, olive grove, fieldside, 60 m, 05.06.1999, Uys. 274.

Omni-Medit. element.

#### CONVOLVULACEAE

*Convolvulus arvensis* L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 25; Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 36; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 88; Uys. 100; Uys. 103; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 463; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 203.

Cosmopolitan.

*C. elegantissimus* Mill.

Yapıldak village, fallow field, 50 m, 29.03.1999, Uys. 147; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 246.

Medit. element.

#### DIPSACACEAE

*Knautia integrifolia* (L.) Bert. var. *bidens* (Sm.) Borbás

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 72; Uys. 118.

E. Medit. element.

*Scabiosa atropurpurea* L. subsp. *maritima* (L.) Arc.

Suluca village, fruit garden, 2 m, 23.05.1999, Uys. 449.

*S. reuteriana* Boiss.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 66.

Endemic, E. Medit. element, LR(lc).

#### ERICACEAE

*Arbutus andrachne* L.

Dümrek village, olive grove, fieldside, 60 m, 05.06.1999, Uys. 285; 05.11.2000, Uys. 492.

#### EUPHORBIACEAE

*Euphorbia exigua* L. var. *exigua*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 260.

*E. helioscopia* L.

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 207; Dümrek village, olive grove, 60 m, 23.05.2000, Uys. 408.

*E. rigida* M.Bieb.

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 359.

Medit. element.

#### FABACEAE

*Genista anatolica* Boiss.

Dümrek village, olive grove, fieldside, 60 m, 05.06.1999, Uys. 310.

E. Medit. element.

*Lathyrus annuus* L.

Çardak Town, vineyard, 5 m, 29.05.1999, Uys. 187.

Medit. element.

*Lotus corniculatus* L. var. *corniculatus*

Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 142; Dümrek village, 60 m, 05.06.1999, Uys. 239.

*Medicago minima* (L.) Bart. var. *minima*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 253.

*M. orbicularis* (L.) Bart.

Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 131; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 168; Uys. 185; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 192.

*M. polymorpha* L. var. *vulgaris* (Benth.) Shinnars

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 106; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 162; Uys. 163; Uys. 164; 23.05.2000, Uys. 468; Dümrek village, olive grove, 60 m, 23.05.2000, Uys. 418.

*Melilotus indica* (L.) All.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 175; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 200; Dümrek village, olive grove, 60 m, 23.05.2000, Uys. 411.

*Onobrychis aequidentata* (Sibth. & Sm.) d'Urv.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 73; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 238; 23.05.2000, Uys. 421.

Medit. element.

*O. caput-galli* (L.) Lam.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 252.

Medit. element.

*Ononis spinosa* L. subsp. *leiosperma* (Boiss.) Sirj.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 265.

*Spartium junceum* L.

Yapıldak village, beside dirt track between fields, 50 m, 23.05.2000, Uys. 444.

Medit. element.

*Trifolium angustifolium* L. var. *angustifolium*

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 3; Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 98; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 137; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 302.

*T. campestre* Schreb.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 13; Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 58b; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 139; Uys. 144; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 193.

*T. fragiferum* L. var. *fragiferum*

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 171.

*T. lappaceum* L.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 58a; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 191.

Medit. element.

- T. pratense* L. var. *pratense*  
Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 327; Uys. 332.
- T. purpureum* Loisel. var. *purpureum*  
Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 326.
- T. spumosum* L.  
Çardak town, vineyard, 5 m, 29.05.1999, Uys. 194.  
Medit. element.
- T. stellatum* L. var. *stellatum*  
Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 133; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 159.
- T. subterraneum* L.  
Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 132.
- T. tomentosum* L.  
Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 328.
- Trigonella spicata* Sibth. & Sm.  
Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 305.  
E. Medit. element.
- Vicia cracca* L. subsp. *stenophylla* Velen.  
Çardak town, vineyard, 5 m, 29.05.1999, Uys. 188; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 272; 23.05.2000, Uys. 397.
- V. ervilia* (L.) Willd.  
Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 14; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 121; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 180.
- V. grandiflora* Scop. subsp. *grandiflora*  
Çardak town, vineyard, 5 m, 29.05.1999, Uys. 189; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 458.  
Euro-Sib. element.
- V. peregrina* L.  
Çardak town, vineyard, 5 m, 29.05.1999, Uys. 190; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 459.
- V. sativa* L. subsp. *amphicarpa* (Dorthe) Asch. & Graebn.  
Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 15; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 81.
- FAGACEAE**
- Quercus cerris* L. var. *austriaca* (Willd.) Loudon  
Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 124.  
Euro-Sib. element.
- Q. cerris* L. var. *cerris*  
Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 126.  
Medit. element.
- Q. coccifera* L.  
Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 127.  
Medit. element.
- Q. infectoria* Olivier subsp. *boissieri* (Reut.) O.Schwartz  
Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 281.
- Q. infectoria* Olivier subsp. *infectoria*  
Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 282.  
Euro-Sib. element.
- Q. ithaburensis* Decne. subsp. *macrolepis* (Kotschy) Hedge & Yalt.  
Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 123.  
E. Medit. element.
- Q. pubescens* Willd.  
Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 122; Uys. 125; Taştepe village, olive grove, 30 m, 30.06.2001, Uys. 480.
- Q. trojana* Webb  
Dümrek village, beside olive grove, 60 m, 05.11.2000, Uys. 495.  
E. Medit. element.
- GENTIANACEAE**
- Centaurium pulchellum* (Swartz) Druce  
Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 284.
- C. tenuiflorum* (Hoffmanns. & Link) Fritsch subsp. *acutiflorum* (Schott) Zeltner  
Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 283.  
Medit. element.
- Gentiana asclepiadea* L.  
Suluca village, fruit garden, under shade of trees, 2 m, 23.05.2000, Uys. 462.  
Euro-Sib. element.
- GERANIACEAE**
- Erodium cicutarium* (L.) L'Hér. subsp. *cicutarium*  
Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 354; Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 373.
- Geranium columbinum* L.  
Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 89; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 157; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 195.
- G. purpureum* Vill.  
Çardak town, vineyard, 5 m, 29.05.1999, Uys. 202.
- HYPERICACEAE**
- Hypericum perforatum* L.  
Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 425.
- H. triquetrifolium* Turra  
Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 316.
- ILLECEBRACEAE**
- Herniaria incana* Lam.  
Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 399.
- LAMIACEAE**
- Ballota nigra* L. subsp. *anatolica* P.H.Davis  
Taştepe village, cotton fieldside, 30 m, 05.11.2000, Uys. 491.  
Endemic, Ir.-Tur. element, LR (lc).
- Galeobdolon luteum* Huds. subsp. *montanum* (Pers.) R.R.Mill.  
Suluca village, fruit garden, wet places, 2 m, 29.05.1999, Uys. 169.  
Euro-Sib. element.

**Lamium amplexicaule** L.

Dümrek village, olive grove, 60 m, 12.03.2000, Uys. 365.

Euro-Sib. element.

**L. purpureum** L. subsp. **purpureum**

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 199.

Euro-Sib. element.

**Sideritis montana** L. subsp. **montana**

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 263.

Medit. element.

**Stachys cretica** L. subsp. **anatolica** Rech.f.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 77; Dümrek village, near side of olive grove, 60 m, 05.06.1999, Uys. 256; Suluca village, near side of fruit garden, 2 m, 23.05.2000, Uys. 447.

Endemic, Ir.-Tur. element, LR (lc).

**Thymbra spicata** L. var. **spicata**

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 264; Uys. 270.

E. Medit. element.

**LINACEAE**

**Linum trigynum** L.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 261.

Medit. element.

**LYTHRACEAE**

**Lythrum hyssopifolia** L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 149; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 271; Uys. 308c; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 341.

**MALVACEAE**

**Lavatera punctata** All.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 108; 23.05.2000, Uys. 431; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 453.

**Malva moschata** L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 18.

**M. sylvestris** L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 160; Yapıldak village, fallow field, 50 m, 23.05.2000, Uys. 432; Dümrek village, olive grove, 60 m, 23.05.2000, Uys. 388; 05.11.2000, Uys. 499.

**OLEACEAE**

**Jasminum fruticans** L.

Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 435.

Medit. element.

**Olea europaea** L. var. **sylvestris** (Mill.)Lehr

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 362.

Medit. element.

**Phillyrea latifolia** L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 93; Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 309; Güzelyalı village, beside olive grove, 10 m, 12.03.2000, Uys. 360; Uys. 361.

Medit. element.

**OROBANCHACEAE**

**Orobanche alba** Stephan

Çardak town, vineyard, on *Lamium purpureum* L. subsp. *purpureum*, 5 m, 29.05.1999, Uys. 210.

**O. minor** Sm.

Çardak town, vineyard, on *Trifolium campestre* Schreb., 5 m, 29.05.1999, Uys. 211; Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 481.

**O. mutellii** F.Schultz

Suluca village, fruit garden, on *Vicia peregrina* L., 2 m, 23.05.2000, Uys. 455.

**PAPAVERACEAE**

**Fumaria densiflora** DC.

Dümrek village, olive grove, 60 m, 23.05.2000, Uys. 422; Suluca village, vineyard, 2 m, 23.05.2000, Uys. 448.

**Hypocoum imberbe** Sibth. & Sm.

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 374.

**Papaver dubium** L.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 48; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 269.

**P. rhoeas** L.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 47; Uys. 49; Uys. 50; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 145; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 259; Uys. 280; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 323; Uys. 324; Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 418.

**PLANTAGINACEAE**

**Plantago lagopus** L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 17; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 308a.

Medit. element.

**P. lanceolata** L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 16; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 158.

**P. maritima** L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 99.

**POLYGONACEAE**

**Polygonum bellardii** All.

Dümrek village, olive grove, 60 m, 05.11.2000, Uys. 498.

**P. equisetiforme** Sibth. & Sm.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 42.

**P. lapathifolium** L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 176.

**Rumex crispus** L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 119; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 294.

**R. pulcher** L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 173; Uys. 174.

**R. scutatus** L.

Yeniköy village, olive grove, 10 m,

05.06.1999, Uys. 330; Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 389.

#### PRIMULACEAE

##### *Anagallis arvensis* L. var. *arvensis*

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 62; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 196; Dümrek village, olive grove, 60 m, 05.06.1999,

Uys. 216; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 313.

##### *A. arvensis* L. var. *caerulea* (L.) Gouan

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 63; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 217; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 312.

#### PORTULACACEAE

##### *Portulaca oleracea* L.

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 488.

#### RANUNCULACEAE

##### *Adonis microcarpa* DC.

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 391.

##### *Anemone coronaria* L.

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 351.

Medit. element.

##### *A. pavonina* Lam.

Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 367.

*Consolida regalis* Gray subsp. *paniculata* (Host) Soó var. *divaricata* (Ledeb.) P.H.Davis

Taştepe village, olive grove, 30 m, 30.06.2001, Uys. 477.

*Nigella arvensis* L. var. *involucrata* Boiss.

Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 438.

##### *Ranunculus arvensis* L.

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 198.

*R. ficaria* L. subsp. *calthifolius* (Reichb.) Arc.

Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 366.

##### *R. muricatus* L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 104; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 165.

##### *R. neapolitanus* Ten.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 156; Taştepe village, cotton field, 30 m, 12.03.2000, Uys. 379.

Medit. element.

#### RESEDACEAE

##### *Reseda lutea* L. var. *lutea*

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 161.

#### RHAMNACEAE

##### *Paliurus spina-christi* Mill.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 84; 23.05.2000, Uys. 441.

#### ROSACEAE

*Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 79.

Euro-Sib. element.

*Pyrus elaeagnifolia* Pall. subsp. *elaeagnifolia*

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 67.

##### *Rosa sempervirens* L.

Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 289; Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 427; Çardak town, beside vineyard, 5 m, 23.05.2000, Uys. 472.

Medit. element.

##### *Rubus sanctus* Schreb.

Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 249; Yeniköy village, beside olive grove, 10 m, 05.06.1999, Uys. 319; Taştepe village, cotton fieldside, 30 m, 23.05.2000, Uys. 477.

##### *Sarcopoterium spinosum* (L.) Spach

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 78.

E. Medit. element.

#### RUBIACEAE

##### *Galium aparine* L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 54; Dümrek village, olive grove, under the olive trees, 60 m, 05.06.1999, Uys. 279.

##### *G. palustre* L.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 254; 23.05.2000, Uys. 393.

Euro-Sib. element.

##### *G. tricornutum* Dandy

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 201.

Medit. element.

##### *Rubia peregrina* L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 80.

Medit. element.

##### *R. tinctorum* L.

Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 278; Yeniköy village, beside olive grove, 10 m, 05.06.1999, Uys. 314.

Ir.-Tur. element.

#### RUTACEAE

*Haplophyllum buxbaumii* (Poir.) G.Don subsp. *buxbaumii*

Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 322; Taştepe village, olive grove, 30 m, 30.06.2001, Uys. 481.

#### SANTALACEAE

##### *Osyris alba* L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 90; Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 390; 05.11.2000, Uys. 496.

Medit. element.

#### SCROPHULARIACEAE

##### *Bellardia trixago* (L.) All.

Yapıldak village, wheat field side, 50 m, 29.05.1999, Uys. 32; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 86.

**Veronica cymbalaria** Bodard

Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 363; Taştepe village, cotton field, 30 m, 12.03.2000, Uys. 376.

Medit. element.

**V. hederifolia** L.

Taştepe village, cotton field, 30 m, 12.03.2000, Uys. 378.

Cosmopolitan.

**V. triloba** (Opiz) Kerner

Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 364; Taştepe village, cotton field, 30 m, 12.03.2000, Uys. 377.

**SOLANACEAE**

**Solanum nigrum** L. subsp. *schultesii* (Opiz) Wessely

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 37; Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 480; Dümrek village, olive grove and wheat field, 60 m, 05.11.2000, Uys. 494.

**STYRACACEAE**

**Styrax officinalis** L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 31; Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 288.

**ULMACEAE**

**Ulmus minor** Mill. subsp. *canescens* (Melville) Browicz & Ziel.

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 478; Dümrek village, olive grove, 60 m, 05.11.2000, Uys. 497.

Medit. element.

**URTICACEAE**

**Urtica pilulifera** L.

Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 339.

Medit. element.

**VERBENACEAE**

**Vitex agnus-castus** L.

Suluca village, beside fruit garden, 2 m, 29.05.1999, Uys. 153; Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 214; Taştepe village, beside cotton field, 30 m, 05.11.2000, Uys. 487.

**VIOLACEAE**

**Viola alba** Besser subsp. *dehnhardtii* (Ten.) Bech.

Taştepe village, cotton field, 30 m, 12.03.2000, Uys. 375.

**V. kitaibeliana** Roem. & Schult.

Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 352; Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 372.

**VISCACEAE**

**Viscum album** L. *album*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 311.

**VITACEAE**

**Vitis sylvestris** C.C.Gmel.

Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 320.

**ZYGOPHYLLACEAE**

**Tribulus terrestris** L.

Taştepe village, cotton field, 30 m, 05.11.2000, Uys. 486; Taştepe village, olive grove, 30 m, Uys. 478.

**LILIOPSIDA**

**ARACEAE**

**Dracunculus vulgaris** Schott

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 128.

Medit. element.

**CYPERACEAE**

**Carex distans** L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 152; 23.05.2000, Uys. 466.

**C. divisa** Huds.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 75.

Euro-Sib. element.

**C. flacca** Schreb. subsp. *serrulata* (Biv.) Greuter

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 248.

Medit. element.

**Cyperus rotundus** L.

Suluca village, fruit garden, watering pool side, wet places, 2 m, 23.05.2000, Uys. 465.

**DIOSCOREACEAE**

**Tamus communis** L. subsp. *communis*

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 92; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 298.

**IRIDACEAE**

**Crocus chrysanthus** (Herb.) Herb.

Yapıldak village, fallow field, 50 m, 12.03.2000, Uys. 381.

**Gladiolus italicus** Mill.

Çardak town, beside vineyard, 5 m, 23.05.2000, Uys. 475.

**Romulea linairesii** Parl. subsp. *graeca* Bég.

Güzelyalı village, olive grove, open places, 10 m, 12.03.2000, Uys. 353; Dümrek village, olive grove and wheat field, 60 m, 12.03.2000, Uys. 368.

E. Medit. element.

**JUNCACEAE**

**Juncus articulatus** L.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 151.

Euro-Sib. element.

**J. bufonius** L.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 304.

Cosmopolitan.

**J. hybridus** Brot.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 150; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 338.

**LILIACEAE**

**Allium pallens** L. subsp. *pallens*

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 236.

Medit. element.

**A. scorodoprasum** L. subsp. *rotundum* (L.) Stearn

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 208; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 336; Suluca village, fruit garden, 2 m, 23.05.2000, Uys. 467.

Medit. element.

**Asparagus acutifolius** L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 91; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 300.

Medit. element.

**A. verticillatus** L.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 275; Uys. 276; Uys. 301.

**Gagea peduncularis** (J.Presl & C.Presl) Pascher

Yapıldak village, fallow field, 50 m, 12.03.2000, Uys. 383.

Medit. element.

**Muscari neglectum** Guss. ex Ten.

Çardak town, vineyard, 5 m, 12.03.2000, Uys. 384; Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 403.

**Ornithogalum fimbriatum** Willd.

Yapıldak village, fallow field, 50 m, 12.03.2000, Uys. 382.

E. Medit. element.

**O. narbonense** L.

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 205; Uys. 206; 23.05.2000, Uys. 474.

Medit. element.

**O. pyrenaicum** L.

Yapıldak village, fallow field, 50 m, 23.05.2000, Uys. 443.

**Ruscus aculeatus** L. var. **angustifolius** Boiss.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 94; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 244; Güzelyalı village, olive grove, 10 m, 12.03.2000, Uys. 358.

**POACEAE****Aegilops geniculata** Roth

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 321b.

Medit. element.

**A. markgrafii** (Greuter) Hammer

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 68; Dümrek village, olive grove, 60 m, 05.06.1999, Uys.

222; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 345.

E. Medit. element.

**A. triuncialis** L. subsp. **triuncialis**

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 9.

**A. umbellulata** Zhuk. subsp. **umbellulata**

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 223; Uys. 231a.

Ir.-Tur. element.

**Agropyron cristatum** (L.) Gaertn. subsp. **pectinatum** (M.Bieb.) Tzvelev var. **pectinatum**

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 229; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 348; Uys. 349.

**Avena sterilis** L. subsp. **sterilis**

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 7; wheat field, 29.05.1999, Uys. 52; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 180; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 213; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 303; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 342; Uys. 343.

**Briza maxima** L.

Dümrek village, beside olive grove, 60 m, 05.06.1999, Uys. 232; 23.05.2000, Uys. 405.

**Bromus hordeaceus** L. subsp. **hordeaceus**

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 5; Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 434.

**B. hordeaceus** L. subsp. **molliformis** (Lloyd) Maire & Weiller

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 179; Çardak town, vineyard, 5 m, 29.05.1999, Uys. 181; Uys. 182.

Medit. element.

**B. inermis** Leyss.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 218.

**B. intermedius** Guss.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 59; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 69; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 136.

**B. lanceolatus** Roth

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 65; 23.05.2000, Uys. 434.

**B. scoparius** L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 4.

**B. sterilis** L.

Çardak town, vineyard, 5 m, 29.05.1999, Uys. 183; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 235.

**B. tectorum** L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 87.

**Catapodium rigidum** (L.) C.E.Hubb. ex Dony subsp. **rigidum** var. **majus** (C.Presl) Lainz

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 230.

**C. rigidum** (L.) C.E.Hubb. ex Dony subsp. **rigidum** var. **rigidum**

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 44.

**Cynodon dactylon** (L.) Pers. var. **dactylon**

Dümrek village, olive grove and wheat field, 60 m, 23.05.2000, Uys. 416; Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 437; Çardak town, vineyard, 5 m, 23.05.2000, Uys. 476.

**Dactylis glomerata** L. subsp. **hispanica** (Roth) Nyman

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 219; Uys. 228; Uys. 234.

**Echinochloa crus-galli** (L.) P.Beauv.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 97b.

**Hordeum bulbosum** L.

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 1; Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 97a; 23.05.2000, Uys. 429.

**H. murinum** L. subsp. **leporinum** (Link)  
Arc. var. **leporinum**

Yapıldak village, wheat field and beside it, 50 m, 29.05.1999, Uys. 2; Uys. 53; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 344; Yapıldak village, dirt track between fields, 50 m, 23.05.2000, Uys. 430.

**Lolium perenne** L.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 83; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 135.

Euro-Sib. element.

**L. rigidum** Gaudin var. **rigidum**

Yapıldak village, wheat fieldside, 50 m, 29.05.1999, Uys. 8; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 346.

**Melica ciliata** L. subsp. **transsilvanica** (Schur) Husn.

Dümrek village, beside olive grove, rocky places, 60 m, 05.06.1999, Uys. 221.

**Parapholis incurva** (L.) C.E.Hubb.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 95.

**Phalaris canariensis** L.

Yapıldak village, wheat field and beside it, 50 m, 29.05.1999, Uys. 6; Uys. 60; Yeniköy village, olive grove, 10 m, 05.06.1999, Uys. 347.

Medit. element.

**P. paradoxa** L.

Yapıldak village, wheat field, 50 m, 29.05.1999, Uys. 61; Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 227.

Medit. element.

**Phleum subulatum** (Savi) Asch. & Graebn. subsp. **subulatum**

Dümrek village, olive grove, 60 m, 29.05.1999, Uys. 215; Uys. 225; Uys. 237.

**Phragmites australis** (Cav.) Trin. ex Steud.

Suluca village, fruit garden, edge of watering pool, 2 m, 23.05.2000, Uys. 457.

Euro-Sib. element.

**Piptatherum miliaceum** (L.) Coss. subsp. **miliaceum**

Dümrek village, beside olive grove, 60 m, 05.06.1999 Uys. 224; Uys. 240.

Medit. element.

**Polypogon viridis** (Gouan) Breistr.

Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 178.

Euro-Sib. element.

**Rostraria cristata** (L.) Tzvelev var. **glabriflora** (Trautv.) Dogan

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 226.

**Setaria glauca** (L.) P.Beauv.

Yapıldak village, dirt track between fields, 50 m, 29.05.1999, Uys. 64; Uys. 76; Yapıldak village, fallow field, 50 m, 29.05.1999, Uys. 96; Suluca village, fruit garden, 2 m, 29.05.1999, Uys. 172.

**Stipa bromoides** (L.) Dörf.

Dümrek village, olive grove, 60 m, 05.06.1999, Uys. 247.

Medit. element.