

FLORA OF TIGEM ALPARSLAN FARM AND SURROUNDINGS (MUŞ)

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ABSTRACT

This study was aimed to determine the Flora of Tigem Alparslan Farm and Surroundings, being situated in the city borders of Muş. The study carried out between 2004-2007, 1209 plant specimens were collected. At the end of the identifications of the specimens, 213 genera and 377 specific and infraspecific taxa, belonging to 65 families were found. 10 taxa are endemic for Turkey (2,65 %). The distribution of the taxa in the phytogeographical regions are as follows: Irano-Turanian 81 (21,48 %), Euro-Siberian 14 (3,71 %), Mediterranean 6 (1,59 %), unknown and cosmopolits 276 (73,20 %).

Key words: Flora, Muş, Tigem

INTRODUCTION

The Research area is located geographically in the eastern Anatolia. Turkey and East Anatolia Region phytogeographically is located in the Irano-Turanian region. The area is the richest phytogeographic field in terms of species and endemism. In addition, Turkey is the largest area of the three phytogeographical region (Davis, 1965). The region is offering a great potential in terms of beekeeping (Öztürk ve Erkan, 2004). Our research area is a region of Turkey has been less work. (Davis ve Hedge, 1975; Çırpıcı, 1987). The area is stated in the B8 square according to the grid system adopted in the Flora of Turkey (Davis, 1965).

The research area is composed of Tigem Alparslan farm, Mecimekkale Hill, Arıncı Dam surroundings in the province borders of Muş and some small area of Mus-Bingol and Mus-Varto provinces. Research area is approximately 100,000 hectares and 1300 - 1400 meters high from sea level. The floristic composition of the area is composed of herbaceous formation with kserofitik step character. Formation is also found rarely shrubs. Tigem Alparslan Farm located in the research area is protected since 60 years. There are wetland compositions in research and some minor topographic roughness in the area.

In addition, topography and the main substance of the province of Mus far as time-dependent research area because of the various major soil groups formed. The majority of this land are limeless brown soils and alluvial soils.

The revival of vegetation in the research area are appeared to be *Crocus biflorus* subsp. *tauri*, *Colchicum szovitsii*, *Gagea gageoides*, *Ceratocephalus falcatus*, *Ranunculus kochii*, *Muscari armeniacum* respectively.

In the edges of streams and damp places, *Equisetum arvense*, *E. ramosissimum*, *Trifolium pratense* var. *pratense*, *Medicago sativa* subsp. *sativa*, *Salix alba*, *Tamarix tetrandra*, *Thypha latifolia*, *Phragmites australis*, *Juncus inflexus* show the prevalence of such taxa.

Due to the location of research area in the Muş lowland, many culture plants. *Beta vulgaris* var. *altissima*, *B. vulgaris* var. *cicla*, *Cucurbita pepo*, *Cucumis melo*, *Citrullus lanatus*, *Nicotiana rustica*, *N. tabacum*, *Triticum sativum*, *T. dicocon*, *Hordeum vulgare*, *Zea mays*, *Heliantus annuus* were determined in the field. The taxa constitute the most common culture forms.

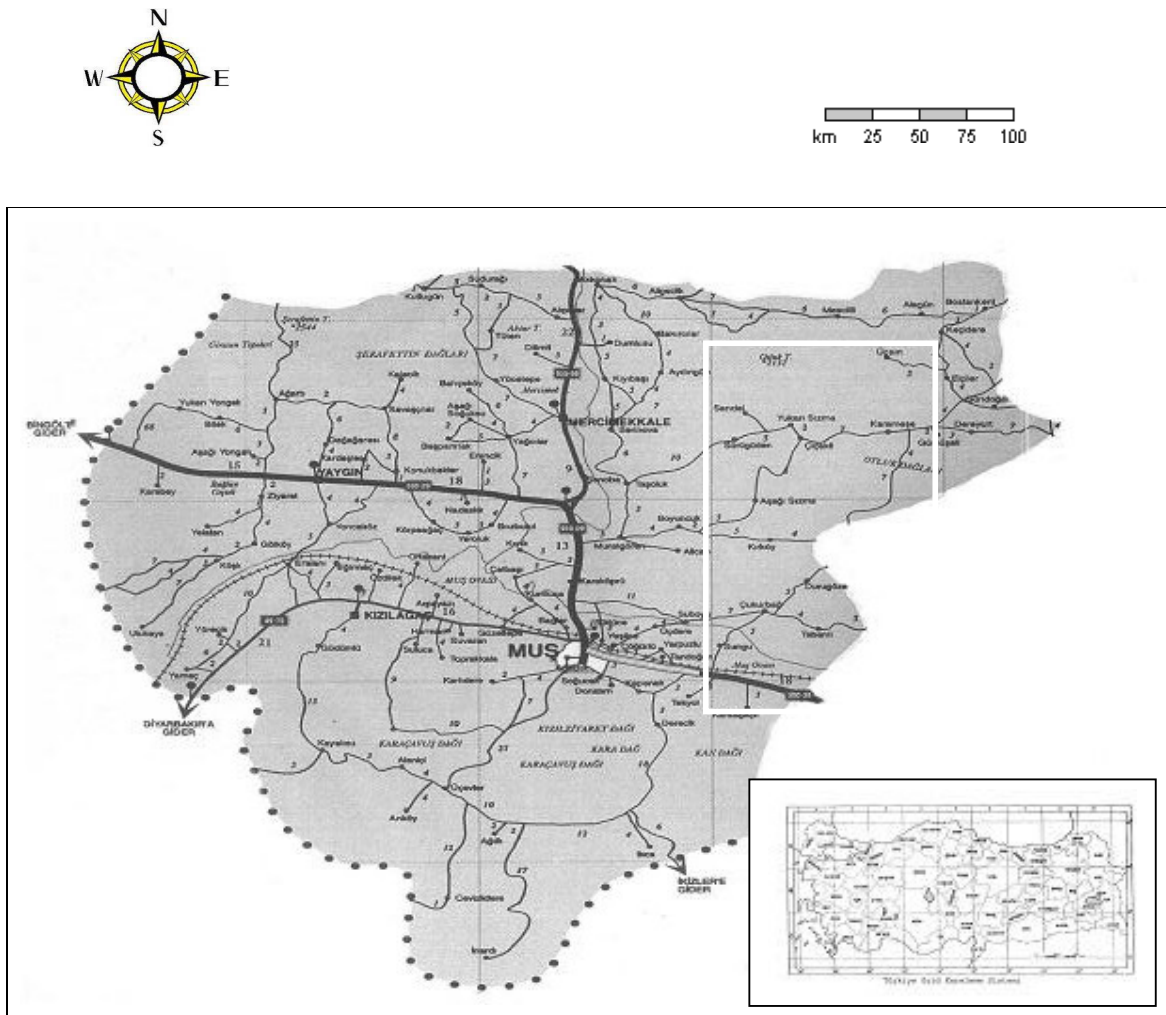


Figure 1. Geographic map of study area

The climatic data of the research was provided from the meteorology station in Muş (DMİGM,1975-2005). According to Emberger’s precipitation-temperature quotient (1955), the area is described bioclimatically glacial type of Mediterranean climate (Table 1).

Table 1. Climatic data of the meteorological station.

Station	h	P	M	m	Q	PE	PE/M	Precip. regime	Bioclimate
Muş	1284	778,1	33,2	-11	61,9	40,9	1,231	Sp.W.A.Sm.	Few rainy

h - altitude in m; P - mean annual precipitation in mm; M - mean temperature (°C) for the hottest month; m - mean temperature (°C) for the coldest month; Q - Emberger’s pluviometric quotient: 2000

P/M2-m2; PE: Summer rainfall; PE/M - Emberger's index of xericity; A - Autumn; Sp - Spring; W - Winter; Sm - Summer

MATERIAL AND METHOD

The materials of the study consisting of 1209 vascular plant specimens were collected between 2005 and 2007. These specimens were identified basically with the help of the Flora of Turkey (Davis, 1965-1985; Davis et al., 1988; Guner et al., 2000) and the other floras (Komarov & Shishkin, 1933-1964; Tutin et al., 1964-1981; Rechinger et al., 1965-1977; Townsend & Evan, 1966-1985; Zohary, 1966-1986), some revisions (Aytac, 1997; Ekici & Ekim, 2004), and an article (Sutory, 2005).

Identified specimens were listed according to Flora of Turkey in the phylogenetic system. In the floristic list, locality, habitat, altitude, collection dates, collectors' names, number, endemism, and the phytogeographical region of the specimens were given respectively. The floristic list includes cultivated plants in the area as well. Cultivated plants are indicated by an asterisk (*). The symbol (►) in front of a plant name indicates a new record for the B8 square. The abbreviations used in the text and the floristic list are as follows: Ir.-Tur.: Irano-Turanian; Medit.: Mediterranean; Euro-Sib.: Euro-Siberian; En.: Endemic; CÖ: Cihat ÖLÇÜCÜ; FÖ: Fazlı ÖZTÜRK; OK: Osman KARABACAK; LB: Lutfi BEHCET.

DISCUSSION

At the end of the study, 1209 vascular plant specimens were collected from the area 377 taxa and 214 genera belonging to 65 families were identified. Seven species belong to *Gymnospermae*, while the other 368 were *Angiospermae*. *Dicotyledones* and *Monocotyledones* are consisted 287 and 81 species respectively. A summary of the numerical data is presented in Table 2.

Table 2. The dispersion of taxa into the large taxonomical groups.

Plant Group	Number of families	Number of genera	Number of taxa
Pteridophyta	1	1	2
Spermatophyta	64	213	375
Gymnospermae	2	5	7
Angiospermae	62	208	368
Dicotyledones	52	166	287
Monocotyledones	10	42	81
Total	65	214	377

The number of endemic taxa in the area is 10 and endemism rate is 2,71%. The endemism rate is low and below the average in Turkey (34%) (Ekim, 2005). The families of endemics are two *Asteraceae*, one *Boraginaceae*, one *Convolvulaceae*, one *Fabaceae*, *Fagaceae*, two *Liliaceae*, one *Ranunculaceae* and one *Solaneceae*.

In the research area, the number of identified taxa and the distribution to phytogeographic region and percentage rates are; Irano- Turanian 81 (21,84%), Euro-Siberian 14 (3,71 %) , Mediterranean 6 (1,59%) and cosmopolitan or of unknown phytogeographical origin 276 (73,20%).

In the Research area, most species and subspecies taxa having 10 family are; *Fabaceae* 48 (%12,73) *Poaceae* 43 (%11,40), *Asteraceae* 34 (%9,01), *Brassicaceae* 21 (%8,22) *Liliaceae* 21 (%8,22), *Ranunculaceae* 17 (%4,50), *Rosaceae* 15 (%3,97), *Caryophyllaceae* 13 (%3,44), *Boraginaceae* 13 (%3,44) ve *Polygonaceae* 10, (%2,65).

The richest genera in terms of the number of taxa are *Asteraceae* 23 (%10,79) familyasıdır. Bu familyayı *Poaceae* 22 (%10,33), *Brassicaceae* 16 (%7,51), *Fabaceae* 15 (%7,04), *Boraginaceae* 11 (%5,16), *Caryophyllaceae* 9 (%4,22), *Rosaceae* 9 (%4,22), *Liliaceae* 8 (%3,75), *Ranunculaceae* 7 (%3,28) ve *Lamiaceae* 7 (%3,28) respectively.

The genera with the largest number of species in the research area are *Bromus* 10 (%2,65), *Ranunculus* 9 (%2,38), *Lathyrus* 8 (%2,12), *Polygonum* 8 (%2,12), *Trifolium* 8 (%2,12), *Astargalus* 7 (%1,85), *Veronica* 7 (%1,85), *Muscari* 6 (%1,59), *Vicia* 6 (%1,59) ve *Gagea* 5 (%1,32).

Some morphological characters different from those given in the Flora of Turkey (Davis, 1965-1985) were observed in some specimens. These properties are given in Table 3.

Table 3. Some of the taxa different from those in the Flora of Turkey

Taxa	Flora of Turkey	Flora of Tigem Alparslan farm and Surroundings
<i>Aegilops speltoides</i> var. <i>ligustica</i>	Plant Hairy	Plant glabrous
<i>Arenaria cucubaloides</i>	Leaf length up to 12 cm	Leaf length up to 18 cm
<i>Psilurus incurvus</i>	Awn terminal	Awn subterminal
<i>Rorippa amphibia</i>	Plant Hairy	Plant glabrous
<i>Sinapis arvensis</i>	Seeds number 5 and up	Seeds number 3

Furthermore, in the research area interesting two taxa are spread.

Hyacinthus orientalis L. subsp. *chionophilus* Wendelboe. endemic plants are spread between 1600 m and 2500 m in elevation. But in our research, the distribution of endemic plant was determined to be 1310 m and expanded to B8 square.

Although Amphibia *Rorippa* (L.) Bess usually found in the Mediterranean region, this taxa have been identified in our study area.

The less studied regions of Turkey within B8 square and located Tigem farm and surroundings were examined. Some taxa in the research area have exposed.

ACKNOWLEDGEMENTS

We would like to thank Lütfi Behçet (Yüzüncü Yıl University), Murat Ünal (Yüzüncü Yıl University), Osman Karabacak (Siirt University) for identifying some of the samples and Mr. Uğur Bilge Çınar for excursion. This study was funded by the Yuzuncu Yıl University Scientific Research Projects Unit (Project Number 2006 FBE-YL49).

APPENDIX

The Floristic List

PTERIDOPHYTA

1. EQUISETACEAE

1. EQUISETUM L.

1- E. ramosissimum Desf.

Muş: Near Hünan Hill , riverside , humid places ,1320 m, 23.06.2006, CÖ, 620.

2- E. arvense L.

Muş: Near Hünan Hill , riverside , humid places, 1320 m, 23.06.2006,CÖ, 621.

SPERMATOPHYTA

GYMNOSPERMAE

1. PINACEAE

1. PICEA Dietr.

** 1- P. orientalis* (L.) Link

Muş: Tigem loding around, garden, 1310 m, 12.05.2006, CÖ, 130.

2. PINUS L.

** 1- P. sylvestris* L.

Muş: Tigem loding around, garden, 1310 m, 12.05.2006, CÖ, 131.

** 2- P. nigra* Arn. subsp. *pallasiana* (Lamb.) Holmboe.

Muş: Tigem loding around, garden, 1310 m, 12.05.2006, CÖ, 132.

2. CUPRESSACEAE

1. CUPRESSUS L.

** 1- C. sempervirens* L.

Muş: Varto road, garden, 1310 m, 28.08.2006, CÖ, 705.

2. JUNIPERUS L.

** 1- J. chinensis* L.

Muş: Tigem loding around, garden, 1310 m, 12.05.2006 , CÖ, 135.

**2- J. exelsa* Bieb.

Muş: Varto road, garden, 1330 m, 05.05.2006, CÖ, 102.

3. THUJA L.

** 1- T. orientalis* L. "Compacta"

Muş: Tigem loding around, garden, 1310 m, CÖ, 136.

ANGIOSPERMAE

DICOTYLEDONEAE

1. RANUNCULACEAE

1. NIGELLA L.

► 1- N. orientalis L.

Muş: Alican village surroundings, steppe, 1320 m, 23.06.2006, CÖ, 622.

2. CONSILIDA L.

1- C. orientalis (Gay) Schröd

Muş: MYO surroundings , steppe, 1300 m, 23.06.2006, CÖ, 623 , Ir-Tur elm.

2- C. oliveriana (DC.) Schröd.

Muş: In Tigem farm, roadside, steppe, 1310 m, 23.06.2006, OK, 624, Ir-Tur elm.

3. CLEMANTIS L.

1- C. orientalis L.

Muş: Mercimekkale, DSİ picnic area, steppe, 1350 m, 31.08.2006, CÖ, 1002.

4. ADONIS L.

1- A. aestivalis L. subsp. *aestivalis*

Muş: In Tigem farm, steppe, 1310 m, 23.06.2006, CÖ, 625.

2- *A. aestivalis* L. subsp. *parviflora* (Fisch. Ex DC.) Busch.

Muş: Tigem loding around, steppe, 1310 m, 23.06.2006, CÖ, 626.

5. RANUNCULUS L.

1- *R. fenzlii* Boiss.

Muş: Taksih creek surroundings, steppe, 1320 m, 28.05.2006, CÖ, 359, Ir-Tur elm. Endemic.

2- *R. kotschyi* Boiss.

Muş: Taksih creek surroundings, steppe, 1300m, 28.05.2006, CÖ, 362.

3- *R. constantinopolitanus* (DC.) D'URV.

Muş: Tigem loding around, humid places, 1310 m, 23.06.2006, CÖ, 628.

►4- *R. damascenus* Boiss & Gaill.

Muş: Hartuaz creek surroundings, humid places, 1300 m, 05.05.2006, OK det., 107, Ir.-Tur. elm.

5- *R. illyricus* L. subsp. *illyricus*

Muş: Taksih creek surroundings, humid places, 1300 m, 23.06.2006, OK det., 629.

►6- *R. cornutus* DC.

Muş: In Tigem farm, riverside, 1310 m, 23.06.2006, CÖ, 730.

7- *R. arvensis* L.

Muş. In Tigem farm, humid places, 1310 m, 28.05.2006, OK det., 360. 8- *R. kochii*

Ledep.

Muş: In Tigem farm, garden, 1310 m, 16.04.2006, CÖ, 6, Ir.-Tur. elm.

9- *R. trichophyllus* Chaix.

Muş: Tigem farm surroundings, wet places, 1310m, 14.05.2006, CÖ, 140.

6. CERATOCEPHALUS Moench.

►1. *C. falcatus* (L.) Pers.

Muş: Tigem farm surroundings, humid places, 1310 m, 16.04.2006, CÖ, 4.

7. THALICTRUM L.

1- *T. minus* L. var. *majus* (Crantz.) Crep.

Muş: MYO surroundings, steppe, 1300 m, 28.05.2006, CÖ, 365.

2. BERBERIDACEAE

1. BONGARDIA C. A. Mey.

►1- *B. chrysogonum* (L.) Spach.

Muş : Tigem farm surroundings, field, 1310 m, 20.05.2006, CÖ, 280, Ir.-Tur elm.

3. PAPAVERACEAE

1. GLAUCIUM Adans.

1- *G. grandiflorum* Boiss. & Huet var. *grandiflorum*

Muş : Varto road 18 km ,roadside, 09.06.2006, CÖ, 473, Ir-Tur elm.

2. PAPAVER L.

►1- *P. glaucum* Boiss & Hausskn.

Muş: Kağnires village surroundings, steppe, 1300 m, 11.06.2006, CÖ, 475, Ir-Tur elm.

2-*P. macrostomum* Boiss. & E.Huet ex Boiss.

Muş: Şeyh Yusuf village surroundings, steppe, 1320 m, 11.06.2006, CÖ, 476.

4. FUMARIACEAE

1. FUMARIA L.

1- *F. microcarpa* Boiss & Hausskn.

Muş: Muş - Bingöl road- 8 km, 1310 m, 28.05.2006, FÖ det., 370.

5. BRASSICACEAE (CRUCIFERAE)

1. BRASSICA L.

* 1- *B. oleraceae* L.

Muş: Tigem farm surroundings, garden, 1310 m, 06.06.2006, CÖ, 466.

▶ **2- *B. deflexa*** Boiss.

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 387.

2. SINAPIS L.**1- *S. arvensis*** L.

Muş: Karasu surroundings, steppe, 1290 m,
28.05.2006, CÖ, 378.

3. CRAMBE L.**1- *C. orientalis*** L. var. *orientalis*

Muş: Tigem farm surroundings, field, 1310 m,
23.06.2006, CÖ, 631, Ir-Tur elm.

4. LEPIDIUM L.**1- *L. perfoliatum*** L.

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 380.

5. CARDARIA Desv.**1- *C. draba*** (L.) Devs. subsp. *draba*

Muş: Tigem farm surroundings, steppe, 1310m ,
28.05.2006, CÖ, 372.

6. THLASPI L.**1- *T. perfoliatum*** L.

Muş: Tigem loding around, steppe, 1310 m,
05.05.2006, CÖ, 110.

7. CAPSELLA Medik.**1- *C. bursa-pastoris*** (L.) Medik.

Muş: Tigem farm surroundings, steppe, 1310 m ,
16.04.2006, CÖ, 7.

8. BOREAVA Jaub. & Spach.▶ **1- *B. orientalis*** Jaub. Et. Spach.

Muş: Tigem farm surroundings, field, 1310 m,
21.05.2006, CÖ, 285, Ir- Tur elm.

9. ALYSSUM L.**1- *A. desertorum*** Stapf. var. *desertorum*

Muş: Muş-Bingöl road 6. km, field, 1310 m,
28.05.2006, CÖ, 379.

2- *A. stapfii* Vierh.

Muş: Hacı creek surroundings , steppe, 1320 m,
11.06.2006, CÖ, 478, Ir-Tur elm.

10. EROPHILA DC.**1- *E. verna*** (L.) Chevall. subsp. *verna*

Muş: Tigem farm surroundings, steppe, 1310m,
16.04.2006, CÖ, 12.

11. NASTURTIUM R. BR.**1- *N. officinale*** R. Br.

Muş: Muş-Bingöl road, humid places, 1300 m,
23.06.2006, CÖ, 633.

12. RORIPPA Scop.▶ **1- *R. amphibia*** (L.) Bess.

Muş: Tigem farm surroundings, humid places, 1310
m, 28.05.2006, CÖ, 384.

13. BARBAREA R. Braga**1- *B. vulgaris*** R.Braga

Muş: Tigem farm surroundings, humid places, 1310
m, 16.04.2006, CÖ, 17.

14. ERYSIMUM L.**1- *E. cuspidatum*** (Bieb.) DC.

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 386.

2- *E. passgalense* Boiss.

Muş: Karasu surroundings, humid places, 1290 m,
28.05.2006, CÖ, 375.

3- *E. repandum* L.

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 376.

15. SISYMBRIUM L.**1- *S. altissimum*** L.

Muş: Muş- Bingöl road 7. km, humid places, 1300 m, 28.05.2006, CÖ, 383.

2- *S. loselii* L.

Muş: Alican village surroundings, steppe, 1350 m, 30.08.2006, CÖ, 750.

16. DESCURAINIA Webb & Berth.

1- *D. sophia* (L.) Webb ex Prantl.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 381.

6. CARYOPHYLLACEAE

1. ARENARIA L.

1- *A. cucubaloides* Smith.

Muş: Hünan hill surroundings, steppe, 1320 m, 30.08.2006, CÖ, 755, Ir-Tur elm.

2. STELLARIA L.

1- *S. media* (L.) Vill. subsp. *media*

Muş: Tigem farm surroundings, meadow, 1310 m, 05.05.2006, CÖ, 111.

▶2- *S. media* (L.) Vill. subsp. *pallida*

(Dumort.) Asch. & Graebn.

Muş: Tigem farm surroundings, meadow, 1310 m, 14.05.2006, CÖ, 142.

3. CERASTIUM L.

1- *C. dichotomum* L. subsp. *dichotomum*

Muş: Tigem farm surroundings, meadow, 1310 m, 23.06.2006, CÖ, 634.

2- *C. glomeratum* Thuill.

Muş: Tigem farm surroundings, steppe, 1310 m, 16.04.2006, CÖ, 21.

4. HOLOSTEUM L.

▶1- *H. umbellatum* L. var. *umbellatum*

Muş: Tigem farm surroundings, steppe, 1310 m, 14.05.2006, CÖ, 143.

5. BUFONIA L.

1- *B. tenuifolia* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 14.05.2006, CÖ, 146.

6. DIANTHUS L.

1- *D. strictus* Banks & Sol. var. *gracilior* (Boiss.) Revec.

Muş: Muş – Bingöl road 8. km, steppe, 1320 m, 23.06.2006, CÖ, 635.

2- *D. masmenaeus* Boiss. var. *masmenaeus*

Muş: Mercimekkale surroundings, steppe, 1320 m, 30.08.2006, CÖ, 772.

7. GYPSOPHYLLA L.

1- *G. venusta* Fenzl.

Muş: Şehpirin village surroundings, steppe, 1320 m, 23.06.2006, CÖ, 636, Ir-Tur elm.

8. VACCARIA Medik.

▶1- *V. pyramidata* Medik. var. *pyramidata*

Muş: Sirönk village surroundings, 1300 m, steppe, 30.08.2006, CÖ, 790.

9. SILENE L.

1- *S. cappadocica* Boiss. & Heldr.

Muş: Şeyhpirin village surroundings, steppe, 1320 m, 23.06.2006, CÖ, Ir.- Tur. elm.

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

Muş. Alican village surroundings, humid places, 1320 m, 28.05.2006, CÖ, 389.

7. POLYGONACEAE

1. POLYGONUM L.

*** 1- *P. baldschuanicum* Regel.**

Muş : Varto road, garden, 1320 m, 19.05.2006, CÖ, 205.

2- *P. amphibium* L.

Muş : DSİ Arıncı Dam surroundings, marsh, 1330 m, 30.08.2006, CÖ, 803.

3- *P. lapathifolium* L.

Muş : marsh, marsh, 1310 m, 30.08.2006, CÖ, 810.

4- *P. cognatum* Meissn.

Muş : Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 827.

5- *P. arenastrum* Bor.

Muş : Tigem farm surroundings, steppe, 1310 m, 23.06.2006, CÖ, 736.

6- *P. aviculare* L.

Muş : Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 834.

7- *P. polycnemoides* Jaub& Spach.

Muş : Tigem farm surroundings, steppe, 1310m, 30.08.2006, CÖ, 841, Ir-Tur elm.

8- *P. bellardii* All.

Muş : Mercimekkale surroundings, steppe, 1320 m, 30.08.2006, CÖ, 853.

2. RUMEX L.

1- *R. tuberosus* L. subsp. *horizontalis* (Koch.) Rech.

Muş: Tigem farm surroundings, steppe, 1310 m, 11.06.2006, CÖ, 481.

2- *R. alpinus* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 391.

8. CHENOPODIACEAE

1. BETA L.

1- *B. vulgaris* L. var. *altissima* (Doell.) Helm.

Muş: Muş-Bingöl road 12. km, field, 1320 m, 28.08.2006, CÖ, 700, cv.

* **2- *B. vulgaris* L. var. *cicla* (L.) Moq.**

Muş: Muş- Bingöl road 12. km, field, 1320 m, 28.08.2006, CÖ, 702.

2. CHENOPODIUM L.

1- *C. botrys* L.

Muş: Tigem farm surroundings, roadside, 1310 m, 28.05.2006, CÖ, 390.

2- *C. foliosum* (Moench) Aschers

Muş: Tigem farm surroundings, steppe, 1310 m, 06.06.2006, CÖ, 468.

3. NOAEA Moq.

1- *N. mucronata* (Forssk.) Aschers & Schweinf. subsp. *mucronata*

Muş: Haçlı creek surroundings, steppe, 1320 m, 30.08.2006, CÖ, 965.

9. AMARANTHACEAE

1. AMARANTHUS L.

1- *A. retroflexus* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 967.

2- *A. chlorostachys* Willd.

Muş: Mercimekale surroundings, steppe, 1340 m, 30.08.2006, CÖ, 880.

10. PHYTOLACCACEAE

1. PHYTOLACCA

► 1- *P. americana* L.

Muş: Şenova village surroundings, roadside, 1320 m, 30.08.2006, CÖ, 887.

11. TAMARICACEAE

1. TAMARIX L.

► 1- *T. tetrandra* Palas & Bieb.

Muş: Tigem farm surroundings, steppe, 1310 m, 14.05.2006, CÖ, 149.

12. HYPERICACEAE (GUTTIFERAE)

1. HYPERICUM L.

1- *H. helianthemoides* (Spach.) Boiss.

Muş: MYO surroundings, steppe, 1310 m,
23.06.2006, CÖ, 637, Ir.-Tur elm.

2- *H. venustum* Fenzl.

Muş: Tigem farm surroundings, steppe, 1310 m,
30.08.2006, CÖ, 968.

13. MALVACEAE**1. MALVA L.****1- *M. sylvestris* L.**

Muş: Muş- Bingöl road 5. km, steppe, 1300 m,
28.05.2006, CÖ, 393.

2. ALCEA L.**1- *A. apterocarpa* (Fenzl.) Boiss.**

Muş: Şeyhpirin village surroundings, steppe, 1320
m, 30.08.2006, CÖ, 969.

14. GERANIACEAE**1. GERANIUM L.****► 1- *G. rotundifolium* L.**

Muş: Tigem farm surroundings, steppe, 1310 m,
05.05.2006, CÖ, 113.

2- *G. stepporum* Davis.

Muş: Tigem farm surroundings, steppe, 1310 m,
05.05.2006, CÖ, 114, Ir-Tur elm.

2. ERODIUM L'Hér.

**1- *E. cicutarium* (L.) L'Hér. subsp.
*cutarium***

Muş: Tigem farm surroundings, steppe, 1310m,
05.05.2006, CÖ, 115.

15. ZYGOPHYLLACEAE**PEGANUM L.****1- *P. harmala* L.**

Muş: Muş – Varto road 13 km . , steppe, 1320 m,
25.06.2006, CÖ, 638.

16. RUTACEAE**1. HAPLOPHYLLUM A. Juss.****1- *H. schelkovnikovii* Grossh.**

Muş: Mercimekkale surroundings, steppe, 1330 m,
30.08.2006, CÖ, 971, Ir-Tur elm.

17. ACERACEAE**1. ACER L.***** 1- *A. pseudoplatanus* L.**

Muş: DSİ Arıncı Dam picnic area, steppe, 1350 m,
30.08.2006, CÖ, 986.

*** 2- *A. platanoides* L.**

Muş: DSİ Arıncı Dam picnic area, steppe, 1350 m,
30.08.2006, CÖ, 977.

*** 3- *A. negundo* L.**

Muş: DSİ Arıncı Dam picnic area, steppe, 1350 m,
30.08.2006, CÖ, 973.

18. VITACEAE**1. VITIS L.***** 1- *V. vinifera* L.**

Muş : Alican village surroundings , garden, 1330
m, 16.06.2006, CÖ, 550.

19. RHAMNACEAE**1. RHAMNUS L.****1- *R. catharticus* L.**

Muş: Taşkale surroundings, steppe, 1340 m,
30.08.2006, CÖ, 974, Euro-Sib elm.

20. FABACEAE (LEGUMINOSAE)**1. SOPHORA L.****1- *S. alopecuroides* L.**

Muş: Varto road, steppe, 1320, 11.06.2006, CÖ,
483.

2. ROBINIA L.*** 1- *R. pseudoacacia* L.**

Muş: Tigem farm surroundings, garden, 1310 m, 18.06.2006, CÖ, 591.

3. ASTRAGALUS L.

1- *A. mollis* Bieb.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 351, Ir-Tur elm.

2- *A. amblelepis* Fischer.

Muş: Hünan Hill surroundings, steppe, 1350 m, 30.08.2006, CÖ, 890, Ir-Tur elm.

3- *A. lagurus* Willd.

Muş: Mercimekkale surroundings, steppe, 1330 m, 11.06.2006, CÖ, 487.

4- *A. microcephalus* Willd.

Muş: Mercimekkale surroundings, steppe, 1330 m, 11.06.2006, CÖ, 486.

5- *A. odoratus* Lam.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 352.

6- *A. onobrychis* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 18.06.2006, CÖ, 593.

7- *A. campylosema* Boiss. subsp. *nigripilis*
Hub-Mor & Chamb

Muş: Tigem farm surroundings, steppe, 1310 m, 14.05.2006, CÖ, 151, Ir-Tur elm., Endemic.

4. GLYCYRRHIZA L.

1- *G. glabra* L. var. *glabra*

Muş: Mercimekkale surroundings, steppe, 29.08.2006, CÖ, 730.

5. VICIA L.

1- *V. cracca* L. subsp. *stenophylla* Vel.

Muş: Muş- Bingöl road 5. km, field, 1300 m, 28.05.2006, CÖ, 354.

2- *V. noeana* Reuter ex. Bois. var. *noeana*

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 353.

3- *V. anatolica* Turrill.

Muş: Tigem farm surroundings, field 1310 m, 05.05.2006, CÖ, 116, Ir-Tur elm.

►4- *V. hybrida* L.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 350.

5- *V. sativa* L. subsp. *sativa*

Muş: Tigem farm surroundings, field, 1310 m, 19.05.2006, CÖ, 216, cv.

6- *V. sativa* L. subsp. *nigra* (L.) Rhyh. var.

nigra

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 367.

6. LENS Miller.

1- *L. orientalis* (Boiss.) Hand-Mazz.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 368.

7. LATHYRUS L.

1- *L. pratensis* L.

Muş: Tigem farm surroundings, field, 1310 m, 11.06.2006, CÖ, 490.

►2- *L. laxiflorus* (Defs.) O.Kuntze.

subsp. *laxiflorus*

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 369.

3- *L. sphaericus* Retz.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 395.

4- *L. inconspicuus* L.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 396.

►5- *L. setifolius* L.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 398.

6- *L. cicera* L.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 400.

7- *L. nissolia* L.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 402.

►8- *L. aphaca* L. var. *modestus* P.H.

Davis.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 403.

8. PISUM L.*** 1- *P. sativum* L.**

Muş: Tigem farm surroundings, field, 1310 m, 16.06.2006, CÖ, 570.

9. ONONIS L.**1- *O. spinosa* L. subsp. *leiosperma***

(Boiss.) Širj.

Muş: Alican village surroundings, humid places, 1320 m, 10.09.2006, CÖ, 1065.

10. TRIFOLIUM L.**1- *T. repens* L. var. *repens***

Muş: Tigem farm surroundings, humid places, 1310 m, 11.06.2006, CÖ, 495.

2- *T. montanum* L. subsp.

***humboldtianum* (A. Br. & Ascher.) Hossain**

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 404.

3- *T. ambiguum* Bieb.

Muş: Tigem farm surroundings, humid places, 1310 m, 11.06.2006, CÖ, 477.

4- *T. campestre* Schreb.

Muş: Tigem farm surroundings, humid places, 1310 m, 11.06.2006, CÖ, 479

5- *T. physodes* Stev. Ex. Bieb. var.

physodes

Muş: Tigem farm surroundings, humid places, 1310 m, 28.05.2006, CÖ, 405, Medit elm.

6- *T. pratense* L. var. *pratense*

Muş: Tigem farm surroundings, humid places, 1310 m, 28.05.2006, CÖ, 406.

►7- *T. lucanicum* Gasp.

Muş: Tigem farm surroundings, humid places, 1310 m, 28.05.2006, CÖ, 407, Medit elm?.

►8- *T. hirtum* All.

Muş: Tigem farm surroundings, humid places, 1310 m, 11.06.2006, CÖ, 496.

11. MELILOTUS L.**1- *M. officinalis* (L.) Desr.**

Muş: Tigem farm surroundings, steppe, 1310 m, 11.06.2006, CÖ, 500.

2- *M. alba* Desr.

Muş: Tigem farm surroundings, steppe, 1310 m, 23.06.2006, CÖ, 639.

12. MEDICAGO L.**1- *M. lupulina* L.**

Muş: MYO surroundings, steppe, 1300 m, 23.06.2006, CÖ, 640.

2- *M. sativa* L. subsp *sativa*

Muş: Şeyh Yusuf village surroundings, field, 1320 m, 28.08.2006, CÖ, 707.

3- *M. sativa* L. subsp. *cocrulea* (Less. Ex..

Ledep.) Schmalh.

Muş: Hünan Hill surroundings, steppe, 1340 m, 30.08.2006, CÖ, 831.

4- *M. x-varia* Martyn.

Muş: MYO surroundings, steppe, 1300 m, 23.06.2006, CÖ, 641.

13. LOTUS L.**1- *L. corniculatus* L. var. *corniculatus***

Muş: Tigem Farm picnic area, rocky, 1310 m, 21.06.2006, CÖ, 616.

2- *L. corniculatus* L var. *tennifolius* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 408.

14. CORONILLA L.**1- *C. orientalis* Miller. var. *orientalis***

Muş: Tigem farm surroundings, steppe, 1310 m, 14.05.2006, CÖ, 153.

2- *C. varia* L. subsp. *varia*

Muş: Sirönk village surroundings, steppe, 1320 m, 26.05.2006, CÖ, 310.

15. ONOBRYCHIS Adans.

1- *O. cornuta* (L.) Devs.

Muş: Arınç village surroundings, steppe, 1330 m, 12.05.2006, CÖ, 138, Ir-Tur elm.

*** 2- *O. vicifolia* Spoc.**

Muş: Tigem farm surroundings, field, 1310 m, 19.05.2006, CÖ, 233.

► 3- *O. altissima* Grossh.

Muş: Karasu surrounddings, steppe, 1300 m, 23.06.2006, CÖ, 642.

21. ROSACEAE

1. PRUNUS L.

*** 1- *P. cerasifera* Ehrh.**

Muş : Tigem farm surroundings, garden, 1310 m, 21.05.2006, CÖ, 287.

*** 2- *P. x domestica* L.**

Muş : Tigem farm surroundings, garden, 13010 m, 21.05.2006, CÖ, 289.

*** 3- *P. divaricata* Ledep. subsp. *divaricata***

Ledep.

Muş : Tigem farm surroundings, garden, 1310 m, 21.05.2006, CÖ, 290.

2. CERASUS Duhamel.

*** 1- *C. avium* L.**

Muş : Tigem farm surroundings, garden, 1310 m, 19.05.2006, CÖ, 240.

*** 2- *C. vulgaris* L.**

Muş : Tigem farm surroundings, garden, 1310 m, 19.05.2006, CÖ, 242.

3. ARMENIACA Duhamel.

*** 1- *A. vulgaris* Lam.**

Muş : Tigem farm surroundings, garden, 1310 m, 19.05.2006, CÖ, 250.

4. RUBUS

1- *R. canescens* DC. var. *canescens*

Muş : DSİ Arıncı Dam surroundings, garden, 1350 m, 26.05.2006, CÖ, 321.

5. POTENTILLA L.

1- *P. anatolica* Peşmen

Muş: DSİ Arıncı Dam picnic area, humid places, 1350 m, 30.08.2006, CÖ, 833, Ir-Tur elm.

2- *P. geranioides* Willd.

Muş: DSİ Arıncı Dam pinic area, humid places, 1350 m, 30.08.2006, CÖ, 834, Ir-Tur. elm.

6. ROSA L.

1- *R. foetida* J. Herrm.

Muş : DSİ Arıncı Dam surroundings , garden, 1350 m, 26.05.2006, CÖ, 325, Ir-Tur elm.

2- *R. canina* L.

Muş : Karasu surroundings, roadside, 1300 m, 11.06.2006, CÖ, 503.

7. CRATAEGUS L.

*** 1- *C. orientalis* Pallas ex Bieb. var.**

orientalis Pallas ex Bieb.

Muş : Tigem farm surroundings, garden, 1300 m, 26.05.2006, CÖ, 336.

8. CYDONIA Miller.

► * 1- *C. oblonga* Miller.

Muş : Tigem farm surroundings, garden, 1310 m, 07.05.2006, CÖ, 128.

9. MALUS Miller.

*** 1- *M. sylvestris* Miller.**

Muş : Tigem farm surroundings, garden, 1300 m, 26.05.2006, CÖ, 338.

* 2- *M. x-purpurea* Rehd.

Muş : Tigem farm surroundings, garden, 1300 m,
26.05.2006, CÖ, 339.

22. CUCURBITACEAE

1. CITRULLUS Eckl. et Zeyh.

* 1- *C. lanatus* (Thunb.) Matsum. et
Nakai.

Muş : Muş – Bingöl road 15 km, field, 1320 m,
18.06.2006, CÖ, 610.

2. ECBALLIUM A. Rich.

1- *E. elaterium* (L.) A. Rich

Muş: Muş- Bingöl road 10 km, 1320 m, yol kenarı,
18.06.2006, CÖ, 607, Medit elm.

3. BRYONIA L.

1. *B. multiflora* Boiss. & Heldr

Muş: Mercimekkale surroundings, rocky ,1350,
30.08.2006, CÖ, 836, Ir-Tur elm.

4. CUCURBITA L.

* 1- *C. pepo* L.

Muş : Muş - Bingöl road 9 km, field, 1320 m,
16.06.2006, CÖ, 555.

* 2- *C. maxima* Duch.

Muş: Tigem loding around, garden, 1310 m,
16.06.2006, CÖ, 568.

5. CUCUMIS L.

* 1- *C. sativus* L.

Muş: Muş- Bingöl road 9 km., field, 1320 m,
18.06.2006, CÖ,605.

* 2- *C. melo* L.

Muş: Muş- Bingöl road 9 km., field, 1320 m,
18.06.2006, CÖ, 604.

23. CRASSULACEAE

1. SEDUM L.

1- *S. album* L.

Muş: Mercimekkale surroundings, rocky, 1350 m,
30.08.2006, CÖ, 838.

24. APIACEAE (UMBELLIFERAEAE)

1. ERYNGIUM L.

1- *E. billardieri* Delar.

Muş: Muş-Varto road 15. km.,steppe, 1320 m,
30.08.2006, CÖ, 839, Ir-Tur. elm.

2. CHAEROPHYLLA L.

1- *C. crinitum* Boiss.

Muş: Tigem farm surroundings, steppe, 1310 m,
11.06.2006, CÖ, 510, Ir-Tur elm.

3. GRAMMOSCIADIUM DC.

1- *G. daucoides* DC.

Muş: Tigem farm surroundings, steppe, 1310 m,
14.05.2006, CÖ, 156, Ir-Tur. elm.

▶ 2- *G. macrodon* Boiss.

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 409, Ir-Tur elm.

▶ 3- *G. cornotum* (Náb) Townsend

Muş: surroundings, steppe, 1310 m, 28.05.2006,
CÖ, 410, Ir-Tur elm.

4. BIFORA Hoffm

1- *B. radians* Bieb

Muş: Tigem farm surroundings, steppe, 1310 m,
23.06.2006, CÖ, 645.

5. LISAEA Boiss.

1- *L. strigosa* (Bunk & Sol.) Eig

Muş: Tigem farm surroundings, steppe, 1310 m,
25.06.2006, CÖ, 646, Ir-Tur elm.

25. CAPRIFOLIACEAE

1. LONICERA L.

* 1- *L. periclynanum* L.

Muş : Tigem loding around, garden, 1310 m,
16.06.2006, CÖ, 566.

26. VALERIANACEAE

1. VALERIANELLA

1- V. corinata Lois.

Muş: Tigem farm surroundings, garden, 1310 m,
28.05.2006, CÖ, 411.

2- V. coronata (L.) DC.

Muş: Tigem farm surroundings, garden, 1310 m,
28.05.2006, CÖ, 412.

27. DIPSACACEAE

1. DIPSACUS L.

1- D. lacinatus L.

Muş : Muş –Varto road 15 km, roadside,
21.05.2006, CÖ, 293.

2. SCABIOSA

1- S. calocephala Boiss.

Muş: Tigem farm surroundings, garden, 1310 m,
28.05.2006, CÖ, 413, Ir-Tur elm.

► *2- S. rotata* Bieb.

Muş: Tigem farm surroundings, garden, 1310 m,
28.05.2006, CÖ, 414, Ir-Tur elm.

28. ASTERACEAE (COMPOSITAE)

1. XANTHIUM L.

1- X. spinosum L.

Muş: Tigem farm surroundings, field, 1310 m,
30.08.2006, CÖ, 840.

2- X. strumarium L. subsp. *cavanillesii*
(Schouw) D.Löve and P. Dansereaur.

Muş: Tigem farm surroundings, steppe ,1310 m,
30.08.2006, CÖ, 842.

2. INULA L.

1- I. helenium L. subsp. *orgyalis* (Boiss.)

Grierson

Muş : Muş- Varto road 15 km , steppe, 1320 m,
30.08.2006, CÖ, 843.

3. PULICARIA Gaertner

1- P. armena Boiss. & Kotschy.

Muş: Hünan Hill surroundings, field, 1310 m,
30.08.2006, CÖ, 844, Ir-Tur elm. Endemic.

4. HELICHRYSUM Gaertner.

1- H. plicatum D.C. subsp. *plicatum*

Muş: Tigem farm surroundings, roadside, 1300 m,
30.08.2006, CÖ, 845.

5. EVAX Gaertn.

1- E. anatolica Boiss. & Heldr.

Muş : Hünan Hill surroundings, steppe, 21.06.2006,
CÖ, 618, Ir- Tur elm.

6. SENECCIO L.

1- S. vernalis Waldst. et. Kit

Muş: Tigem farm surroundings, roadside, 1310 m,
28.05.2006, 416.

7. ANTHEMIS L.

► *1- A. cotula* L.

Muş: Tigem farm surroundings, roadside, 1310 m,
26.05.2006, CÖ, 340.

2- A. tinctoria L. var *tinctoria*

Muş: Tigem farm surroundings, steppe, 11.06.2006,
CÖ, 512.

8. ACHILLEA L.

1- A. millefolium L. subsp. *millefolium*

Muş: Tigem farm surroundings, steppe, 1310 m,
11.06.2006, CÖ, 517.

- 2- *A. biebersteinii*** Afan.
Muş: MYO surroundings, steppe, 1310 m, 28.05.2006, CÖ, 417.
- 9. TANECETUM L.** (Emend. Briq.)
* **1- *T. coccineum*** (Willd.) Grierson subsp. *chamaemelifolium* (Somm. et Lev.) Grierson
Muş: Tigem farm surroundings, garden, 1310 m, 23.06.2006, CÖ, 647.
2- *T. argyrophyllum* (C.Koch.) Tvetzel var. *argyrophyllum*
Muş: Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 895.
- 10. MATRICARIA L.**
▶ **1- *M. chamomilla*** L. subsp. *chamomilla*
Muş: Muş-Bingöl road, roadside, 1310 m, 26.05.2006, CÖ, 343.
- 11. GUNDELIA L.**
1- *G. tournefortii* L. var. *tournefortii*
Muş: Tigem farm surroundings, roadside, 1310 m, 28.05.2006, CÖ, 418.
- 12. PICNOMON Adans.**
1- *P. acarna* (L.) Cass.
Muş: Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 850.
- 13. CENTAUREA L.**
1- *C. balsamita* Lam
Muş: Hünan Hill surroundings, steppe, 1340 m, 30.08.2006, CÖ, 851, Ir-Tur elm.
2- *C. fenzlii* Reichardt
Muş: Alican village surroundings, roadside, 1320 m, 28.05.2006, CÖ, 419, Ir-Tur elm. Endemic.
3- *C. iberica* Trev. ex. Sprengel.
Muş: Tigem farm surroundings, steppe, 1310 m, 23.06.2006, CÖ, 648.
- 4- *C. depresa*** Bieb.
Muş: Tigem farm surroundings, roadside, 1310 m, 30.08.2006, CÖ, 852.
- 14. XERANTHEMUM L.**
1- *X. annuum* L.
Muş: Mercimekkale surroundings, steppe, 1340 m, 30.08.2006, CÖ, 860.
- 15. CHARDINA Desf.**
1- *C. orientalis* (L.) O.Kuntze.
Muş: Tigem farm surroundings, steppe, 1310 m, 11.06.2006, CÖ, 515.
- 16. ECHINOPS L.**
1- *E. pungens* Trautv. var. *pungens* Trautv.
Muş: Hünan Hill surroundings, steppe, 1350 m, 30.08.2006, CÖ, 861, Ir-Tur elm.
- 17. CICHORIUM L.**
1- *C. intibus* L.
Muş: Tigem farm surroundings, steppe, 1310 m, 23.06.2006, CÖ, 649.
- 18. SCORZONERA L.**
1- *S. cana* (C.A.Meyer.) Hoffm var. *jocquiniona* (W. Koch.) Chamberlain
Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 420.
2- *S. parviflora* Jack.
Muş: Tigem farm surroundings, steppe, 1310 m, 14.05.2006, CÖ, 157.
- 19. LACTUCA L.**
1- *L. serriola* L.
Muş: Muş-Varto road 15. km., roadside, 1320 m, 30.08.2006, CÖ, 862, Euro-Sib elm

► **2- *L. aculeata*** Boiss. & Kotschy. Ex.
Boiss.
Muş: Mercimekkale surroundings, roadside, 1340 m, 30.08.2006, CÖ, 863, Ir-Tur elm.

20. SCARIOLOA F. W. Schmidt.

1- *S. orientalis* (Boiss.) Soják
Muş: Tigem farm surroundings, roadside, 1310 m, 30.08.2006, CÖ, 864, Ir-Tur elm.

21. TARAXACUM Wiggers.

1- *T. montanum* (C.A. Meyer) DC.
Muş: Hünan Hill surroundings, steppe, 1350 m, 30.08.2006, CÖ, 867, Ir-Tur elm.

2- *T. androssovii* Schischkin.
Muş: Tigem farm surroundings, humid places, 1310 m, 16.04.2006, CÖ, 26.

22. CREPIS L.

1- *C. foetida* L. subsp. *rhocadifolia* (Bieb.)
Celak.
Muş: Karasu surroundings, steppe, 1300 m, 28.05.2006, CÖ, 421.

2- *C. sancta* Babcock.
Muş: Karasu surroundings, roadside, 1300 m, 28.05.2006, CÖ, 422.

23. HELIANTHUS L.

*** 1- *H. annuus*** L.
Muş: Tigem farm surroundings, field, 1310 m, 30.08.2006, CÖ, 870.

29. PRIMULACEAE

1. ANDROSACE L.

1- *A. maxima* L.
Muş : Tigem farm surroundings, rocky, 1320 m, 05.05.2006, CÖ, 118.

2. ANAGALLIS L.

► **1- *A. arvensis*** L. var. *caerulea* (L.)

Gouan
Muş: Tigem farm surroundings, field, 1310 m, 19.05.2006, CÖ, 261.

30. OLEACEAE

1. SYRINGA L.

*** 1- *S. vulgaris*** L.
Muş: Tigem farm surroundings, garden, 1310 m, 14.05.2006, CÖ, 158.

2. FRAXINUS

1- *F. angustifolia* Vahl. subsp. *angustifolia*
Muş: DSİ Arıncı Dam picnic area, garden, 1350 m, 30.08.2006, CÖ, 871.

1- *F. angustifolia* Vahl. subsp. *syriaca* (Boiss.) Yalt.
Muş: DSİ Arıncı barajı mesire alanı , bahçe, 1350 m, 30.08.2006, CÖ, 872, Ir-Tur elm.

31. CONVULVULACEAE

CONVOLVULUS

1- *C. galaticus* Rotsan ex Choisy
Muş: MYO surroundings, steppe, 1300 m, 28.05.2006, CÖ, 423, Ir-Tur elm., Endemic.

2- *C. arvensis* L.
Muş: MYO surroundings, steppe, 1300 m, 28.05.2006, CÖ, 424.

► **3- *C. betonicifolius*** Miller subsp. *betonicifolius*
Muş: Tigem farm surroundings, field, 1310 m, 11.06.2006, CÖ, 521.

4- *C. betonicifolius* Miller subsp. *pendularis* (Boiss.) Paris
Muş: Tigem farm surroundings, field, 1310 m, 11.06.2006, CÖ, 520, Ir-Tur elm.

32. CUSCUTACEAE

1. CUSCUTA L.

1- C. kurdica Engelmann

Muş : Muş – Varto road 15 km, garden, 1320 m,
30.08.2006, CÖ, 873, Ir - Tur elm.

2- C. planiflora Ten.

Muş : Tigem farm surroundings, garden, 1310 m,
23.06.2006, CÖ, 689.

33. BORAGINACEAE**1. ASPERUGO L.****1- A. procumbens** L.

Muş: Tigem farm surroundings, steppe, 1310 m,
14.05.2006, CÖ, 159.

2. PARACARYUM

1- P. cristatum (Schreber) Boiss. Subsp.
cardochorum R. Mill.
Muş: Tigem farm surroundings, steppe, 1310 m,
23.06.2006, CÖ, 651.

3. RINDERA Palas

1- Rindera lanata (Lam.) Bunge var.
canescens (A. DC.) Kusn.
Muş: Muş-Bingöl road 10. km, roadside, 1320 m,
17.06.2006, CÖ, 571, Ir-Tur elm.

4. LITHOSPERMUM L.**1- L. officinale** L.

Muş: Muş-Bingöl road 10. km, roadside, 1320 m,
17.06.2006, CÖ, 572, Euro-Sib elm.

5. NEATOSTEMA Johnston**► 1- N. apulum** (L.) Johnston.

Muş: Hünan Tepesi surroundings, steppe, 1350m,
30.08.2006, CÖ, 967, Medit. elm.

6. ECHIUM L.**1- E. vulgare** L.

Muş: Muş-Bingöl road 10. km, roadside, 1320 m,
17.06.2006, CÖ, 573, Euro-Sib. Elm

7. MOLTOKIA Helm.**1- M. coerulea** (Willd.)Lehm.

Muş: Muş-Bingöl road 10. km, field ,1320 m,
17.06.2006, CÖ, 574, Ir- Tur elm.

8. ONOSMA L.**1- O. bracteosum** Hausskn. et Bornm.

Muş: MYO surroundings, steppe, 1300 m,
28.05.2006, CÖ, 425, Ir-Tur elm., Endemic.

2- O. albo-roseum Fisch. et Mey. subsp.

albo-roseum Fisch. et Mey. var. *albo-roseum*
Fisch. et Mey.

Muş: MYO surroundings, steppe, 1300 m,
28.05.2006, CÖ, 426, Ir-Tur elm.

► 3- O. auriculatum Aucher ex DC.

Muş: MYO surroundings, steppe, 1300 m,
28.05.2006, CÖ, 427, Ir-Tur elm.

9. CERINTHE L.**1- C. minor** L. *auriculata* (Ten.) Domac

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 428.

10. ANCHUSA L.**1- A. azurea** Miller var. *azurea*

Muş: Mercimekkale surroundings, steppe, 1350 m,
30.08.2006, CÖ, 874.

11. ALKANNA L.**1- A. orientalis** (L.) Boiss. var. *orientalis*

Muş: Muş-Bingöl road 10. km, roadside, 1320 m,
17.06.2006, CÖ, 589, Ir-Tur elm.

34. SOLANACEAE**1. SOLANUM L.****1- S. dulcamara** L.

Muş: DSİ Arıncı Dam picnic area, under wooded,
1350 m, 16.06.2006, CÖ, 557, Euro-Sib elm.

2. LYCIUM L.

1- *L. anatolicum* A. Baytop et R. Mill

Muş: Mercimekkale surroundings, steppe, 1350 m, 16.06.2006, CÖ, 558, Ir- Tur elm. Endemic.

3. DATURA L.

► **1- *D. stramonium*** L.

Muş: Muş- Varto road 15 km, roadside, 1320 m, 30.08.2006, CÖ, 875.

4. HYOSCYAMUS

1- *H. niger* L.

Muş : Muş – Varto Road 13 km, roadisde, 18.06.2006, CÖ, 595.

2- *H. reticulatus* L.

Muş : Hünan Hill surroundings , field, 18.06.2006, CÖ, 596, Ir – Tur elm.

5. NICOTIANA L.

►* **1- *N. rustica*** L.

Muş: Varto road, field, 1320 m, 17.06.2006 CÖ, 590.

►* **2- *N. tabacum*** L.

Muş: Varto road, field, 1320 m, 17.06.2006 CÖ, 588.

35. SCROPHULARIACEAE**1. VERONICA L.**

1- *V. verna* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 05.05.2006, CÖ, 119.

2- *V. persica* Poiret

Muş: Tigem farm surroundings, humid places, 1310 m, 28.05.2006, CÖ, 429.

3- *V. biloba* Schreber.

Muş: DSİ Arıncı Dam picnic area, humid places, 1350 m, 29.08.2006, CÖ, 736.

4- *V. anagallis-aquatica* L. subsp. *michauxii* (Lam.) A. Jelen.

Muş: DSİ Arıncı Dam picnic area, humid places, 1350 m, 29.08.2006, CÖ, 740.

5- *V. lysimachioides* (Boiss.) M.A.

Fischer.

Muş: DSİ Arıncı Dam picnic area, humid places, 1350 m, 29.08.2006, CÖ, 743.

6- *V. microcarpa* Boiss.

Muş: Hünan Hill surroundings, humid places, 1310 m, 09.06.2006, CÖ, 470.

7- *V. orientalis* Miller. subsp. *orientalis*

Muş: Tigem farm surroundings, steppe, 1310 m, 16.06.2006, CÖ, 559.

2. LAGOSTIS Gaertner

1- *L. stolonifera* (C.Koch.) Maxim.

Muş: Hünan Hill surroundings, humid places, 1310 m, 09.06.2006, CÖ, 471, Ir- Tur elm.

36. OROBANCHACEAE**1. OROBANCHE**

1- *O. alba* Stephan

Muş: MYO surroundings, steppe, 1300 m, 28.05.2006, CÖ, 430.

37. LAMIACEAE (LABIATAE)**1. AJUGA L.**

► **1- *A. orientalis*** L.

Muş : Tigem farm surroundings, stepe, 1310 m, 04.06.2006, CÖ, 463.

2. PHLOMIS L.

1- *P. tuberosa* L.

Muş : Muş- Bingöl road 5 km , field, 1320 m, 11.06.2006, CÖ, 524.

3. LAMIUM L.

1- *L. garganicum* L. subsp. *reniforme*

(Montbret & Aucher ex Benth.) R.R.Mill

Muş: DSİ Arıncı Dam surroundings, garden, 1350 m, 30.08.2006, CÖ, 876.

2- *L. amplexicaule* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 05.05.2006, CÖ, 101, Euro- Sib elm.

4. STACHYS L.

1- *S. annua* (L.) L. subsp. *annua* (L.) L. var. *annua* (L.) L.

Muş : Muş- Bingöl road 10 km , field, 19.05.2006, CÖ, 266, Ir-Tur elm.

5. MENTHA L.

1- *M. longifolia* (L.) Huds. subsp. *typhoides* (Briq.) Harley var. *typhoides*

Muş: Varto road 12 km., humid places, 1320 m, 30.08.2006, CÖ, 877.

6. ZIZIPHORA L.

1. *Z. capitata* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 431, Ir-Tur elm.

7. SALVIA L.

1. *S. brachyantha* (Bordz.) Pobed.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 432, Ir-Tur elm.

2. *S. virgata* Jacq.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 433, Ir-Tur elm.

38. PLUMBAGINACEAE**1. PLUMBAGO**

1- *P. europaea* L.

Muş: DSİ Arıncı Dam surroundings, garden, 1350 m, 30.08.2006, CÖ, 878, Euro-Sib elm.

39. PLANTAGINACEAE**1. PLANTAGO L.**

1- *P. major* L. subsp. *major* L.

Muş: DSİ Arıncı Dam surroundings, garden, 1350 m, 30.08.2006, CÖ, 879.

2- *P. major* L. subsp. *intermedia* (Gilib)

Lange

Muş: DSİ Arıncı Dam surroundings, garden, 1350 m, 30.08.2006, CÖ, 880.

3- *P. lanceolata* L.

Muş: Tigem farm surroundings, humid places, 1310 m, 28.05.2006, CÖ, 434.

40. SANTALACEAE**1. THESIUM L.**

1- *T. billardieri* Boiss.

Muş: Tigem farm surroundings, steppe, 1310m, 28.05.2006, CÖ, 435.

41. LORANTHACEAE**1. VISCUM L.**

►1- *V. album* L. subsp. *austriacum*

(Wiesb.) Vollman

Muş : Şenova village surroundings, riverside, 30.08.2006, CÖ, 881.

42. EUPHORBIACEAE**1. EUPHORBIA L.**

1- *E. orientalis* L.

Muş : Mercimekkale surroundings, steppe, 1350 m, 23.06.2006, CÖ, 653.

2- *E. falcata* L. subsp. *falcata* L. var. *falcata* L.

Muş : Mercimekkale surroundings, steppe, 1350 m, 23.06.2006, CÖ, 654.

3- *E. virgata* Waldst. et Kit.

Muş : Mercimekkale surroundings, steppe, 1350 m, 23.06.2006, CÖ, 655.

43. BUXACEAE**1. BUXUS L.**

►* 1- *B. sempervirens* L.

Muş : Tigem farm surroundings, garden, 1310 m, 16.06.2006, CÖ, 569.

44. URTICACEAE**1. URTICA L.***I- U. dioica* L.

Muş. Varto road , humis places, 1320 m,
30.08.2006, CÖ, 882, Euro-Sib elm.

45 . MORACEAE**1. MORUS L.**** I- M . alba* L.

Muş: Mercimekkale surroundings, garden, 1310 m,
21.05.2006, CÖ, 295.

▶ ** 2- M. nigra* L.

Muş: Tigem farm surroundings, garden, 1310 m,
26.05.2006, CÖ, 345.

2. FISCUS L.** I- F. carica* L.

Muş: Tigem farm surroundings, roadside, 1310 m,
26.05.2006, CÖ, 346.

46. ULMACEAE**1. ULMUS L.***I- U. minor* Miller. subsp. *minor*

Muş: DSİ Arıncı Dam surroundings, garden, 1350
m, 30.08.2006, CÖ, 883.

47. JUGLANDACEAE**1. JUGLANS L.**** I- J. regia* L.

Muş: Kağnıreş village surroundings, garden, 1320
m, 12.05.2006, CÖ, 139.

48. PLATANACEAE**1. PLATANUS L.**** I- P. orientalis* L.

Muş: Muş - Tigem, roadside, 1310 m, 15.09.2006,
CÖ, 1075.

49. FAGACEAE**1. QUERCUS L.***I- Q. robur* L. subsp. *pedunculiflora* (C.

Koch.) Menitsky

Muş: Varto road, steppe, 1310 m, 28.08.2006, CÖ,
710, Ir-Tur elm.

2- Q. petraea (Mattuschka) Liebl. subsp.*pinnatiloba* (C.Koch.) Menitsky

Muş: Varto road, steppe, 1310 m, 28.08.2006, CÖ,
711, Endemic.

3- Q. libani Oliver.

Muş: Varto road, steppe, 1310 m, 28.08.2006, CÖ,
712, Ir-Tur elm.

50. BETULACEAE**BETULA L.***I- B. pendula* Roth.

Muş : Mercimekkale surroundings, rocky, 1350 m,
23.06.2006, CÖ, 656.

** 2- B. pendula* Roth. "lacinata"

Muş : Tigem loding around, garden, 19.06.2006,
CÖ, 612.

51. SALICACEAE**1. SALIX L.**** I- S. alba* L.

Muş: Tigem farm surroundings, garden, 1310 m,
05.05.2006, CÖ, 103.

▶ ** 2- S. babylonica* L.

Muş: Tigem farm surroundings, garden, 1310 m,
05.05.2006, CÖ, 104.

** 3- S. caprea* L.

Muş: Muş- Bingöl road 5. km., garden, 1310 m,
28.05.2006 , 438.

4- S. armenorossica A. Skv.

Muş: Muş- Varto road 10. km, roadside, 1310 m,
05.05.2006, CÖ, 109.

2. POPULUS L.▶ ** I- P. euphratica* Oliv.

Muş: Tigem farm surroundings, roadside , 1310 m,
05.05.2006, CÖ, 122.

► * **2- *P. alba* L.**

Muş: Tigem farm surroundings, roadside, 1310 m,
05.05.2006, CÖ, 123.

* **3- *P. usbekkistanica* Kom. subsp.
*usbekkistanica***

Muş: Muş- Bingöl road 9. km, roadside, 1310 m,
05.05.2006, CÖ, 124.

52. RUBIACEAE

1. GALIUM L.

1- *G. verum* L. subsp. *verum*

Muş : Tigem farm surroundings, field, 1310 m,
11.09.2006, CÖ, 528, Euro-Sib elm.

2. RUBIA L.

1- *R. tinctorum* L.

Muş: DSİ Arıncı Dam surroundings, field,
11.09.2006, CÖ, 529, Ir-Tur elm.

MONOCOTYLEDONEAE

53. BUTOMACEAE

2. BUTOMUS L.

1- *B. umbellatus* L.

Muş: Karasu surroundings, humid places, 1300 m,
11.06.2006, CÖ, 532.

54. LEMNACEAE

LEMNA L.

1- *L. minor* L.

Muş : Tigem farm surroundings, marsh, 1310 m,
18.06.2006, CÖ, 598.

55. LILIACEAE

1. ASPARAGUS L.

1- *A. persicus* Baker.

Muş: Tigem farm surroundings, steppe, 1310 m,
28.05.2006, CÖ, 436, Ir-Tur elm.

2. ALLIUM L.

* **1- *A. cepa* L.**

Muş: Tigem farm surroundings, garden, 1310 m,
28.05.2006, CÖ, 437.

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

Muş: Alican village surroundings , steppe 1320 m,
23.06.2006, CÖ, 658.

3- *A. kharputense* Freyn et Sint.

Muş: Tigem farm surroundings, steppe, 1310 m,
05.05.2006, CÖ, 125, Ir-Tur elm.

3. MUSCARI Miller

1- *M. comosum* (L.) Miller.

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 35.

2- *M. tenuiflorum* Tausch.

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 38.

3- *M. longipes* Boiss.

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 40.

► **4- *M. armeniacum* Leichtlin. Ex. Baker.**

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 41.

5- *M. neglectum* Guss

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 45.

► **6- *M. azureum* Fenzl.**

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 46.

4. HYACINTHUS L.

► **1- *H. orientalis* L. subsp. *chionophilus***

Wendelbo.

Muş: Tigem farm surroundings, steppe, 1310 m,
16.04.2006, CÖ, 55, Ir-Tur. elm. Endemic.

5. BELLEVALIA Lapeyr.

►1- *B. longipes* (Palas ex Georgi) Woronow
Muş: Tigem farm surroundings, steppe, 1310 m, 16.04.2006, CÖ, 62.

►2- *B. paradoxa* (Fisch. Et Mey.) Boiss.
Muş: Tigem farm surroundings, steppe, 1310 m, 16.04.2006, CÖ, 65, Ir-Tur elm.

6. TULIPA L.

1- T. sintenesii Baker.
Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 439, Ir-Tur elm., Endemic.

7. GAGEA Salisb.

1- G. gageoides (Zucc.) Vucd.
Muş: Hünan Hill surroundings, steppe, 1320 m, 16.04.2006, CÖ, 78.

►2- *G. fibrosa* (Defs.) Schultes & Schultes Fil.
Muş: Muş-Bingöl road 7 km, roadside, 1310 m, 16.04.2006, CÖ, 83.

►3- *G. reticulata* (Pallas) Schultter
Muş: Hünan Hill surroundings, steppe, 1320 m, 16.04.2006, CÖ, 80.

4- G. taurica Steven.
Muş: Muş-Bingöl road 7 km, roadside, 1310 m, 16.04.2006, CÖ, 84, Ir.-Tur. elm.

5- G. helenae Grossh.
Muş: : Tigem farm surroundings, steppe, 1310 m, 16.04.2006, CÖ, 88, Ir.-Tur. elm.

8. COLCHICUM L.

1- C. szovitsii Fisch. et. Mey.
Muş: Hünan Hill surroundings, humid places, 1350 m, 16.04.2006, CÖ, 92.

2- C. kotschyi Boiss.
Muş: Hünan Hill surroundings, steppe, 1350 m, 30.08.2006, CÖ, 884, Ir.-Tur elm.

56. AMARYLLIDACEAE**1. IXIOLIRION** Fischer ex. Herbert

1- I. tataricum (Pallas) Herbert subsp. *montanum* (Labill.) Takht.
Muş: Tigem farm surroundings, roadside, 1310 m, 14.05.2006, CÖ, 144, Ir-Tur elm.

57. IRIDACEAE**1. CROCUS** L.

1- C. biflocus Miller. subsp. *tauri* (Mow) Mathew.
Muş : Tigem farm surroundings, humid places, 1310 m, 02.04.2006, CÖ, 2, Ir-Tur elm.

2. GLADIOLUS L.

1- G. kotschyanus Boiss.
Muş : Mercimekkale surroundings, humid places, 1350 m, 19.05.2006, CÖ, 275, Ir- Tur elm.

2- G. atroviolaceus Boiss.
Muş: Tigem farm surroundings, humid places, 1300 m, 14.05.2006, CÖ, 145, Ir-Tur elm.

58. ORCHIDACEAE**1. DACTYLORHIZA** Necker ex Nevski

1- D. iberica (Bieb.) Soo.
Muş: Haçlı creek surroundings, humid places, 1330 m, 16.05.2006, CÖ, 163, Medit elm.

2- D. umbrosa (Kar. Et. Kir.) Nevski
Muş: DSİ Arıncı Dam , wet places, 1350 m, 16.05.2006, CÖ, 166, Ir- Tur elm.

59. TYPHACEAE**1. THYPA** L.

1- T. latifolia L.
Muş: Tigem farm surroundings, marsh, 1310 m, 30.08.2006, CÖ, 885.

60. JUNCACEAE

1. JUNCUS L.*1- J. inflexus* L.

Muş: Muş-Bingöl road 4 km, humid places, 1300 m, 23.06.2006, CÖ , 661.

2- J. bufonius L.

Muş: Muş-Bingöl road 4 km, humid places, 1300 m, 23.06.2006, CÖ , 662.

61. CYPERACEAE**1. CYPERUS L.***1- C. longus* L.

Muş: Tigem farm surroundings, humid places, 1310 m, 11.06.2006, CÖ, 536.

2- C. fuscus L.

Muş: Tigem farm surroundings, humid places , 1300 m, 30.08.2006, CÖ, 968, Euro-Sib elm.

2. ELEOCHARIS R. Br.*1- E. palustris* (L.) Roemer & Schultes.

Muş: Hünan Hill surroundings , humid places, 1300 m, 23.06.2006, CÖ, 665.

2- E. mitracarpa Steudel.

Muş: Tigem farm surroundings, humid places, 1310 m, 14.05.2006, CÖ, 160.

3. BOLBOSCHOENUS Ascherson ex Palla*1- B. maritimus* (L.) Palla var. *maritimus*

Muş: Tigem farm surroundings, humid places, 1300 m, 30.08.2006, CÖ, 970.

4. CAREX L.*1- C. spicata* Hudson.

Muş: Hünan Hill surroundings, humid places, 1300 m, 30.08.2006, CÖ, 972.
Euro-Sib elm.

2- C. flacca Schreber. Subsp. *flacca*

Muş: MYO surroundings, humid places, 1300 m, 28.05.2006, CÖ, 440, Euro-Sib elm.

62. POACEAE (GRAMINEAE)**1. TRACHYNIA** Link*1- T. distachya* (L.) Link.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 441, Medit elm.

2. ELYMUS L.*1- E. elongatus* (Host.) Runemark. subsp.*elongatus*

Muş: DSİ Arıncı Dam picnic area, steppe, 1350 m, 30.08.2006, CÖ, 975.

2- E. hispidus (Opiz.) Melderis. subsp.*hispidus*

Muş: DSİ Arıncı Dam picnic area, steppe, 1350 m, 30.08.2006, CÖ, 976.

3. AEGILOPS L.*1- A. speltoides* Tausch. var. *ligustica*

(Savignone) Bornm.

Muş: Tigem farm surroundings, steppe, 1310 m, 23.06.2006, LB det., 668.

2- A. cylindrica Host.

Muş: Muş-Bingöl road 10 km, steppe, 1300 m, 23.06.2006, CÖ, 669.

4. TRITICUM L.** 1- T. sativum* L.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 670.

** 2- T. dicocon* L.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 672.

3- T. aestivum L.

Muş: Muş-Varto road, field, 1300 m, 30.08.2006, CÖ, 978.

5. SECALE L.**1- *S. montanum*** Guss.

Muş: Tigem farm surroundings, steppe, 1310m, 28.05.2006, CÖ, 442.

2- *S. cereale* L. var. *cereale*

Muş : Tigem farm surroundings, steppe, 1310 m ,11.06.2006, CÖ, 538.

3- *S. sylvestre* Host.

Muş : Tigem farm surroundings, steppe, 1310 m ,11.06.2006, CÖ, 539.

6. HORDEUM L.**1- *H. geniculatum*** All.

Muş: Muş-Varto road, field, 11.06.2006, CÖ, 541, Euro-Sib elm.

2- *H. bulbosum* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 443.

*** 3- *H. vulgare*** L.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 674.

7. TAENIATHERUM Nevski

1- *T. caput-medusae* (L.) Nevski subsp. *crinitum* (Schreber.) Melderis.

Muş: Alican village surroundings, steppe 1320 m, 23.06.2006, CÖ, 675.

8. BROMUS L.**1- *B. hordeaceus*** L. subsp. *hordeaceus*

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 676.

2- *B. intermedius* Guss.

Muş: Tigem farm surroundings, steppe, 1350 m, 28.05.2006, CÖ, 444.

3- *B. japonicus* Thunb. subsp. *japonicus*

Thunb.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 677.

4- *B. japonicus* Thunb. subsp. *anatolicus* (Boiss. & Heldr.) Pézes.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 678.

5- *B. scoparius* L.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 679.

6- *B. lanceolatus* Roth.

Muş: Alican village surroundings, steppe, 1310 m, 23.06.2006, CÖ, 680.

7- *B. danthoniae* Trin.

Muş: Varto road 15 km, field, 1300 m, 30.08.2006, CÖ, 980.

8- *B. tectorum* L.

Muş: Tigem farm surroundings, steppe, 1300 m, 30.08.2006, CÖ, 981.

9- *B. sterilis* L.

Muş: Tigem farm surroundings, steppe, 1310 m, 28.05.2006, CÖ, 445.

10- *B. tomentellus* Boiss.

Muş: Muş-Bingöl road 10 km , field, 1320 m, 23.06.2006, CÖ, 683, Ir –Tur elm.

9. AVENA L.*** 1- *A. sativa*** L.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 685.

10. ALOPECURUS L.**1- *A. arundinaceus*** Poir.

Muş: Tigem farm surroundings, riverside, 1310 m, 28.05.2006, CÖ, 446.

2- *A. myosuroides* Hudson. var. *myosuroides* Hudson.

Muş: MYO surroundings, riverside, 1310 m, 28.05.2006, CÖ, 447, Euro-Sib elm.

11. PHELOM L.**1- *P. pratense*** L.

Muş: Tigem farm surroundings, riverside, 1310 m, 28.05.2006, CÖ, 448, Euro-Sib elm.

12. LOLIUM L.

1- *L. perene* L.

Muş: Mercimekkale DSİ Dam picnic area, steppe, 1350 m, 30.08.2006, CÖ, 983.

2- *L. multiflorum* Lam.

Muş: Mercimekkale DSİ Dam picnic area, steppe, 1350 m, 30.08.2006, CÖ, 984.

3- *L. persicum* Boiss. & Hohen.

Muş: Tigem farm surroundings, steppe, 1310 m, 11.06.2006, CÖ, 546, Ir-Tur elm.

13. VULPIA C. C. Gmelin

1- *V. unilateralis* (L.) Stace.

Muş: Tigem farm surroundings, steppe, 1310 m, 11.06.2006, CÖ, 547.

14. PSILURUS Trin.

1- *P. incurvus* (Gouan.) Schinz & Thell.

Muş: Kağnires village surroundings, steppe, 1350 m, 28.05.2006, CÖ, 449.

15. POA L.

1- *P. bulbosa* L.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 450.

16. EREMOPOA Roshev.

1- *E. persica* (Trin.) Roshev.

Muş: Tigem farm surroundings, field, 1310 m, 28.05.2006, CÖ, 452, Ir-Tur elm.

2- *E. songarica* (Schrenk.) Roshev.

Muş: MYO surroundings, roadside 1300 m, 28.05.2006, CÖ, 454, Ir-Tur elm.

17. DACTYLIS L.

1- *D. glomerata* L. subsp. *hispanica*

(Roth.) Nyman.

Muş: Alican village surroundings, 1350 m, steppe, 11.06.2006, CÖ, 548.

18. STIPA L.

1- *S. ehrenbergiana* Trin. et Rupr.

Muş : Mercimekkale surroundings, steppe, 1350 m, 23.06.2006, CÖ, 690, Ir-Tur elm

19. PHRAGMITES L.

1- *P. australis* (Cav.) Trin. & Steudel.

Muş: Kağnires village surroundings, marsh, 1350 m, 30.08.2006, CÖ, 987.

20. CYNODON L. C. M. Richard

1- *C. dactylon* (L.) Pers. var. *villosus*

Regel.

Muş: Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 988.

21. ECHINOCHLOA P. Beauv.

1- *E. crus-galli* (L.) P.Beauv.

Muş: Tigem farm surroundings, steppe, 1310 m, 30.08.2006, CÖ, 990.

22. ZEA L.

* 1- *Z. mays* L.

Muş: Tigem farm surroundings, field, 1310 m, 23.06.2006, CÖ, 688.

REFERENCES

- Akman, Y., 1993. *Biyocoğrafya*. Palme Yayınları, Ankara 380 s.
- Altan, Y., Behçet, L., 1995. Hizan (Bitlis) florası. *Doğa Tr J of Botany*, **19** (1):331-344.
- Altan, Y., Uğurlu, E., 2000. Contribution to the flora of Çavuştepe (Van, Turkey). *Bulletin of Pure & Applied Sciences*, **19B**(2), 117-128, India.
- Anonymus., 2005. *Muş İl Çevre Durum Raporu*. Muş Valiliği İl Çevre Orman Müdürlüğü Yayınları, Muş.
- Aktoklu, E., 1992. C6 karesinden (Erkenek-MALATYA) yeni floristik kayıtlar. *Doğa Tr. J. Of Bot.*, **16**, 71-84.
- Anşin, R., 1981. *Orman Botaniği*. K.T.Ü., Oraman Fak. Yay., No:50, Trabzon, 512 s.
- Anşin, R., 1985. *Orman Botaniği II*. K.T.Ü., Oraman Fak. Yay., No:99, Trabzon, 452 s.
- Anşin, R., 1993. *Tohumlu Bitkiler (Spermatophyta), Odunsu Taksonlar*. K.T.Ü., Orman Fak. Yay., no:19, Trabzon, 512 s.
- Aucher-Eloy, P. M., 1843. *Realtions de Voyages en Orient de 1830 à 1838*. Paris.
- Baytop, T., 1984. *Türkiye’de Bitkiler ile Tedavi*. İstanbul Üniv. Yay., No: 3255, S.4, İstanbul 520 s.
- Behçet, L., 1992. Süphan Dağı (Bitlis) florası. *YYÜ Fen Bil. Enst. Dergisi*, **1** (1):29–38.
- Behçet, L., Altan, Y., 1993. Flora of Adır, Akdamar, Çarpanak and Kuzu Islands (Lake Van). *J of Fac. of Sc. Ege Univ. Series B*, **15** (1):43–54.
- Behçet, L., Altan, Y., 1994. Van, Erçek, Turna ve Bostaniçi göllerinin sucul florası. *Tr J of Botany*, **18** (2):91–98.
- Behçet, L., 1998. A New species of *Fritillaria* L. (*Liliaceae*) from East Anatolia-Turkey, *Bulletin of Pure and Applied Sciences*, **17 B**, 1, 35-38,
- Behçet, L., 2001. A New species of *Ribes* L. (*Grossulariaceae*) from East Anatolia-Turkey *Doğa Tr. J. of Botany*. **25**: 103?105,
- Beyazoğlu, O., 1987. *Tohumlu Bitkiler Sitematiği*. K.T.Ü. Yayınları Yay. No: 17, Trabzon.
- Blackwell, M., 1990. *Poisonous and Medicinal Plants*. Published by Prentice-Hall. Inc., S.69, New Jersey.
- Boissier, E., 1879. *Flora Orientalis*. Vol. I-V, 434–469, Geneve et Basel.
- Boynukara, Z., Öztürk, A., 1992. Artos (Çadır) Dağı (Van) florası. *YYÜ Fen Bil. Enst. Dergisi*, **1** (2):68-89.
- Çetik, A. R., 1985. *Tügrkiye Vejetasyonu I. İç Anadolu’nun Vejetasyonu ve Ekolojisi*. Selçuk Üniv. Yay., Konya.
- Çırpıcı, A., 1987. Türkiye'nin flora ve vejetasyonu üzerine çalışmalar. *Doğa Türk Botanik Dergisi*, **11** (2):217–232.
- Davis, P.H., 1961. Distribution Patterns in Anatolia with Particular Referance to Endemism. In P. H. Davis, P. C. Harper and T. C. Hedge, ed.: *Plant Life of South-West Asia*, P. 15-27, Univ Press., Edinburgh.
- Davis, P.H., (ed.) 1965-1988. *Flora of Turkey and the East Aegean Islands. Vol 1-9 and Suplement* Edinburgh Univ. Press, Edinburgh.

- Davis, P.H., 1975. Turkey: Present State of Floristic Knowledge. *Colloques Internationaux du C. N. R. S.*, No:235.
- Davis, P. H., Hedge, I. C., 1975. *The Flora of Turkey: Past Present and Future*, 30:331-351, Cancellia.
- Davis, P. H., Heywood, V. H., 1963. *Principles Of Angiosperm Taxonomy*. P. 33, Oliver Boyd, Edinburg and London.
- Davis, P. H., Turkey: Present Stace of Floristik Knowledge, Lamina Flor edu Bassin Mediterranean. *Essaide Systematique Synthetique*. 235: 93-115
- Davis, P.H., Mill, R.R., Tan, K., (eds.) 1988. *Flora of Turkey and the East Aegean Islands*. Vol. 10. Edinburg Univ. Press, Edinburg.
- Demirkuş, N., Koyuncu, M., Gül, M., 2001, The Endemik plants of Van *Province, oceedings of The 2nd Balkan Botanical Congress*, s. 163-169 , İstanbul.
- Ekim,T., 1997. Ülkemizdeki Floristik Çalışmaların Kronolojisi ve Son Gelişmeler, Taksonomi Yaz Okulu Ders Notları. Antalya.
- Ekim, T., Koyuncu, M., Vural, M., Duman, H., Aytaç, Z., Adıgüzel, N., 2000. *Türkiye Bitkileri Kırmızı Kitabı*. Türkiye Tabiatını Koruma Derneği, Yayın no: 18, Ankara, 246 s.
- Erik, S. ve Tarkahya, B., 2004. *Türkiye Florası Üzerine*. Kebikeç 17., S. 139-193, Ankara.
- Fırat, M., Demirkuş, N., 2002. *Bahçesaray (Van) ve Çevresi Florası Üzerine Bir Araştırma*. (Yüksek Lisans Tezi), Yüzüncü Yıl Üniv. Fen Bil. Enst.
- Gümüş, İ., 1992. Çakmak dağları (B9-Ağrı) florasına giriş. *Doğa Tr J of Botany*,16(1):54-70.
- Güner, A., Özhatay, N., Ekim, T., Başer, K.H.C. (eds.) 2000. *Flora of Turkey and the East Aegean Island*. Vol. 11. Edinburg Univ. Press, Edinburg.
- İlarıslan, R., 2000. Türkiye’de *Thymus* L. (*Lamiaceae*) taksonlarının yayılış alanları. *S.,Ü., Fen Ed. Fak., Fen Derg.*, S 17, 165-186, Konya.
- Karabacak, O., Koyuncu, M., 2002. *Akçadağ (Erciş-Van) Florası*. (Yüksek Lisans Tezi), Yüzüncü Yıl Üniv. Fen Bil. Enst.
- Kaya, Y., Gümüş, İ., 1990. Ağrı Dağı ve çevresinin florasına katkılar. *X. Ulusal Biyoloji Kongresi* 18-20 Temmuz 1990, Erzurum. 101–110.
- Kışlalhoğlu, M. & Berkes, F., (1987). *Biyolojik Çeşitlilik. Türkiye Çevre Sorunları Vakfı yay.*, Ankara.
- Komarov, V.L., (ed.) 1934-1964. *Flora of the USSR*. Vol. 1–30. Moskova.
- Koyuncu, M., Demirkuş, N., Kaya, A., Aziret, A., 1999. Van ve çevresi geofitleri üzerinde floristik bir araştırma, *Y.Y. Üniv. Araştırma Fonu Başk. (97 EF 030), Proje kesin raporu*, Van..
- Küçet, A. İ., Kesercioğlu, T., 1989. *İzmir İli ve Çevresindeki Bazı Endemik Türler Üzerinde Anatomik, Morfolojik ve Sitotaksonomik Araştırmalar* (yüksek lisans tezi). Dokuz Eylül Üniv., Fen Bil. Enst., İzmir.
- Küçük, M. & Var, M. (1995). Doğu Karadeniz yöresinin doğal herdem yeşil odunu taksonlarının floristik, ekolojik ve ekonomik önemleri. *OT Sistematik Botanik Dergisi* 2 (1): 167–173.
- Oğuz, M. G., 1976. *Batı Anadolu’nun Bazı Endemik Bitki Türleri Üzerinde Sitotaksonomik Araştırmalar* (doktora tezi). Ege Üniv., Fen Fak., İzmir.
- Öğün, E., Altan, Y., 1992. Toprakkale (Van) florası. *YYÜ Fen Bil. Enst, Dergisi*, 1(2):201–211.

- Özçelik, H., 1987. *Erek Dağı (Van) Florası* (yüksek lisans tezi, basılmamış). YYÜ, Fen Bilimleri Enstitüsü, Van.
- Özçelik, H., Öztürk, M., 1991. *Doğu Anadolu'nun Faydalı Bütükleri*. SİSKAV Vakfı Adına Semih Yay., Ankara
- Özçelik, H., Babaç, M.T., 1993. Erek Dağı (Van) florası üzerinde çalışmalar (III). *YYÜ Fen Bilimleri Enst. Dergisi*, 2 (1):18-37.
- Özgökçe, F., 1999. *Özalp (Van) 'm Flora ve Vejetasyonu* (doktora tezi, basılmamış). YYÜ, Fen Bilimleri Enstitüsü, Van.
- Özhatay, N., Byfield, A., Atay, S., 2000. Türkiye'nin önemli bitki alanları. **XV. Ulusal Biyoloji Kong.**, 5-9 Eylül, Ankara.
- Özhatay, N., Kültür, Ş., 2002, Towards the Third Supplement of "Flora of Turkey and the East Aegean Islands", *VIth Plant Life of Southwest Asia Symposium*, 10-14 June, Van, Turkey, s. 106.
- Zeyrek, Y., Öztürk, A., 1993. Van Kalesi florası, *Y.Y.Ü. Fen Bilimleri Enstitüsü Dergisi*, 2 (2),4-26.
- Öztürk, F., Behçet, L., 1998. Kurubaş Geçidi (Van) florası. *Ot Sistemik Botanik Dergisi*, 6 (1):39-57.
- Öztürk, F., Öztürk, A., 1999. A8,B7,B8,B9,B10,C10, kareleri ve Türkiye için *Veronica* (*Scrophulariaceae*) cinsine ait yeni floristik kayıtlar. *Y.Y.Ü. Fen Bilimleri Dergisi*, Cilt 6, Sayı 1, 25-28, Van.
- Öztürk, F., Öztürk, A., 2000. *Veronica* L. (*Scrophulariaceae*) cinsinin Beccabunga Dum. Seksiyonuna ait taksonlar üzerinde ekolojik bir araştırma. **XV. Ulusal Biyoloji Kongresi**, 5-9 Eylül, Ankara.
- Öztürk, F., 2000. New *Veronica* L. subsp. (*Scrophulariaceae*) of Turkey. *Bulletin of Pure and Applied Sciencens*, Vol. 19B, (2): 137-139.
- Öztürk, F., Öztürk, A., 2002, Doğu Anadolu'da yayılış göstren *Veronica* L. (*Scrophulariaceae*) cinsine ait Beccabunga Dum. Seksiyon üyelerinin revizyonu. *Ot Sistemik Botanik Dergisi*, 7 (2): 7-17.
- Öztürk, F., Tugay, O., 2003. Doğu ve Güneydoğu Anadolu florasına katkılar. *Selçuk Üniversitesi Fen Ed. Fak. Dergisi*, 22 (2003): 7-17.
- Öztürk, F., 2004. Taxonomical list of woody plants in Van Lake basin. *Bulletin of Pure and Applied Sciencens*, Vol. 23B, (2): Delphi. India.
- Öztürk, F., Erkan, C., 2004. Van Gölü havzasındaki floristik yapının arıcılık açısından önemi. **XVII. Ulusal Biyoloji Kong.**, 21-24 Haziran, Adana.
- Parrot, F., 1840. *Reise zum Ararat*. Berlin
- Peşmen, H.A., 1973. A Study on the flora of Nemrut Dağı (Bitlis), *İst. Üniv. Orman Fak. Derg.* 209, 271-287.
- Rechinger, K.H., (ed.) 1965-1977. *Flora of Iranica*. Academische Druck-u. Verlagsanstalt Graz-Austria.
- Redde, G., 1899. *Grundzüge der Pflanzenverbreitung in deer Kaukasusländern. Flora der Ararat, Engler-Drude*. Die Vegetation der Erde, 3, 373.
- Regel, V., 1963. *Türkiye'nin Flora ve Vejetasyonuna Genel Bir Bakış*. Ege Univ., Fen Fak. Monografiler Serisi L, İzmir.
- Stace, A. C., 1980. *Plant Taxonomy and Biosystematics*. Edward Arnold Ltd., p.113-176, London.
- Tchihatchef, P., 1857. Etuoles Sur lamina Vegetation deş Hautes Mountagnes de L'Asie-Mineure et de L'Armenie. *Societe Botanique de France*, 883-894, France.

- Temur, A., 1993. *Çavuştepe (Van) florası* (yüksek lisans tezi, basılmamış). YYÜ, Fen Bilimleri Enstitüsü, Van.
- Terzioğlu, E., 1994. Ülkemizin biyolojik çeşitliliği. *Çevre Bakanlığı, Çevre ve İnsan Derg.* Yıl 5, Sayı 18, Ankara.
- Tournefort, J. P., 1717. Relation d'un voyage du Levant. *Fait par l'ordre du rai*, vol. 2, Paris.
- Townsend, C.C., Guest, E., (eds.) 1966–1985. *Flora of Iraq. Vol. 1–9*, Ministry of Agriculture and Agrarian Reform Republic of Iraq.
- Tutin, H.G., Heywood, V.H., et al., 1964-1980, *Flora Europaea*, Vol. 1-5, Press Cambridge Univ., London.
- Ünal, M., Behçet, L., 1999. *Pirreşit Dağı (Van-Muradiye) Florası*. (Yüksek Lisans Tezi), Yüzüncü Yıl Üniv. Fen Bil. Enst.
- Valentine, D. H., and Löve, A., 1958. *Taxonomic and Biosystematic Categories*. Brittonia, 10, 153–166.
- Zohary, M., 1973. *Geobotanical Foundations of the Middle East. Vol. 2*, Stuttgart.