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Original Article

Contribution to the Flora of Sürgü (Doğanşehir/Malatya)

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Malatya,
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Abstract: During the phytosociological study carried out around the Sürgü Dam, 189 taxa belonging to 49 families and 155 species were determined by the identification of collected plant samples. Among these identified plant samples, there were 46 taxa (24%) Irano–Turanian, 9 taxa (5%) Mediterranean, 9 taxa (5%) Euro-Siberian, 7 taxa (4%) Eastern Mediterranean and besides them there were 118 taxa (62%) that could not be determined which phytogeographical region they belong. The number of endemic taxa in the area is 7 and the endemism rate is 3.7%. The area is located in the Irano-Turanian phytogeographical region.

Sürgü Florasına Katkı (Doğanşehir/Malatya)

Anahtar Kelimeler:
Flora,
Sürgü,
Doğanşehir,
Malatya,
Türkiye

Özet: Sürgü Barajı çevresinde yapılan fitososyolojik bir çalışma sırasında toplanan bitki örneklerinin teşhis edilmesiyle 49 familya ve 155 cinse ait 189 takson tespit edildi. Bu tespit edilen bitki örneklerinden 46 takson (%24) İran-Turan, 9 takson (%5) Akdeniz, 9 takson (%5) Avrupa-Sibirya, 7 takson (%4) Doğu Akdeniz elementi olup, 118 taksonun (%62) hangi fitocoğrafik bölgeye ait olduğu belirlenememiştir. Alanda endemik takson sayısı 7 olup endemizm oranı %3.7'dır. Alan İran-Turan fitocoğrafik bölgesinde bulunmaktadır.

1. INTRODUCTION

Sürgü Town, which is bound to the county of Doğanşehir in the province of Malatya, is at the southern end of Malatya and

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is bordered by the Southeastern Anatolian Region. Sürgü is established on the road of Malatya, Kahramanmaraş, Adana, Adıyaman and Gaziantep. In terms of its geographical position, it's important to be on the highway leading to the South East. The distance to Doğanşehir is 14 kilometers and it is 69 kilometers away from Malatya city center (Figure 1) (Anonymous, 2015).

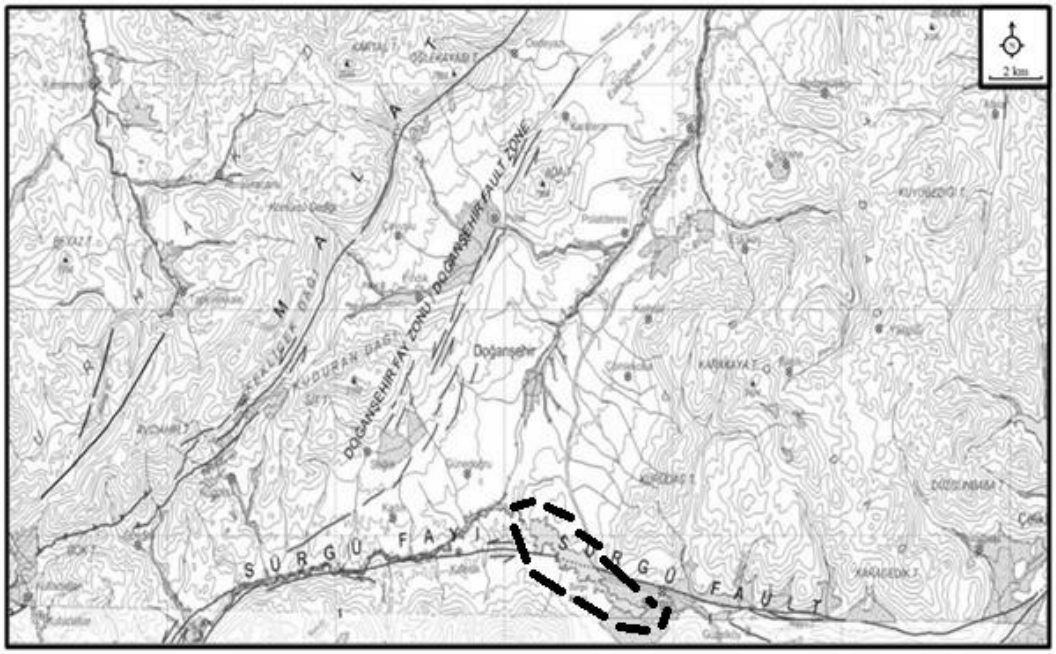

Figure 1. Topographic map of Sürgü (Duman *et al.*, 2012)

The mountains of the Southeastern Taurus range parallel to each other in the north (Kurudağ, Bozdağ) and south (Malatya Mountains) of the Sürgü Plateau. The mean elevations of the mentioned mountains range from 1800-2200 m. Beneath the mountain range there are the plateau plains between 1650-2000 m (Sever, 2006). Sürgü Plain, on where Sürgü Town was established, was formed depending on the Sürgü fault which is a branch of the Eastern Anatolian Fault (EAF) Zone. The average elevation of the plain is about 1300 m. Sürgü Plain is an alluvial-based plain formed by the accumulation of alluvial deposits brought by the seasonal streams and the Sürgü Stream from the surrounding high fields. The area of 6 km² of the plain with a surface area of 23 km² is within the reservoir area of Sürgü Dam. The Sürgü Stream, formed by the joining of Reşadiye, Takaz, Ağcapınar (Pınarbaşı), Sürmelipınar and Çayırpınar (Melo) water resources that collect the waters of Sürgü Basin, is born from the southern parts of Karakaya Hill in the western part of Malatya (Bayram, 2000).

The settlement date of the Sürgü is as old as the settlement date of the Malatya province. Sürgü is in a strategic position because it is on the important transit route (Old Aleppo road) opened to the direction in the southwest part of the Southeastern Taurus that provides access to the important centers of the Eastern Anatolia Region and the Mediterranean Region (Göğebakan, 2002).

Because of this position, it is open to settlements and the vegetation surrounding Sürgü has been severely damaged by the effects of anthropogenic factors such as overgrazing and tree cutting. This effect made itself felt, when Sürgü Dam got into operation in 1968 established for the purpose of irrigation on the Sürgü stream. An indicator of the ongoing increase of pressure today is that most of the natural areas around Sürgü Dam are being used as agricultural areas. Afforestation studies carried out around the dam reservoir are another factor affecting the natural vegetation cover. There are oak (*Quercus*) and juniper (*Juniperus*) communities in the areas around the Sürgü Dam where the natural vegetation cover is preserved. In the vicinity of Sürgü Dam, there are mainly brown forest soils, alluvial and colluvial soils.

Sürgü is geographically located in Eastern Anatolia Region of Turkey and in terms of plant geography it is located in the Irano-Turanian phytogeographical region and it is located on the C6 grid square according to the grid system used in Flora of Turkey (1965-1985).

As it is in the whole region, the continental climate is seen in Sürgü Basin. But in comparison with Malatya, the climate is harsher. That's because it is located higher according to 1300 m altitude (Bayram, 2000). The climate data belonging to the Doğanşehir, which Sürgü is in its boundaries, was obtained from the General Directorate of State Meteorology Affairs (Anonymous, 2014). According to the climate data, the first type of Eastern Mediterranean precipitation regime (W.Sp.A.Sm.) is observed in Doganşehir. The Emberger (1954) drought index (S = PE / M) is 0.40 at Doğanşehir station. The fact that the value of S is below 5 in the station indicates that the region is under the influence of the Mediterranean climate (Table 1).

Table 1. Climatic data of the meteorological stations

Station	h	P	M	Q	m	PE/M	Precipitation Regime	Bioclimate
Doğanşehir	1280	498,8	40	36	-7,2	0,40	W.Sp.A.Sm.	Semiarid very cold

h: altitude in m; P: mean annual precipitation in mm; M: mean maximum temperature (^{0}C) for the hottest month; m: mean minimum temperature (^{0}C) for the coldest month; Q: Emberger's pluviometric quotient: 2000 P/M^2-m^2; PE: Summer rainfall; PE/M: Emberger's index of xericity; Sp: Spring; W: Winter; A: Autumn; Sm: Summer.

2. MATERIAL AND METHOD

In identifying the plant species, basically Flora of Turkey (Davis 1965-1985, Davis *et al.* 1988, Güner *et al.* 2000), as well as other flora studies including Sürgü and its surroundings (Yıldız ve Aktoklu, 1996a; Yıldız ve Aktoklu, 1996b) were consulted with.

Brummitt and Powell's studies (1992) for abbreviations of the taxa writers, and Ekim and his colleagues' (2000) studies for the IUCN hazard categories of endemic taxa were used. All the plant samples were collected from the vicinity of Sürgü Dam in Sürgü town of Doğanşehir district of Malatya province. For this reason, this information was not written to avoid repeating in the locality determining.

While the floristic list was written, the alphabetical order was followed. First the family name, then the genus name, and then the species name and if it exists subspecies taxon were given with their authors respectively. After the taxa names, life forms, phytogeographical regions (if any), endemism cases (if any), locality numbers and collectors' numbers were given respectively. The life forms of all the taxa were determined according to Raunkiær (1934).

Table 2. Localities

R1	Enterance road of Sürgü Dam, steppe, 1320-1350 m, 01.iv.2016
R2	Enterance road of Sürgü Dam, *Juniperus* community and open area, 01.iv.2016
R3	Sürgü Dam, surrounding of weir, streamside-open area, 1250 m, 01.iv.2016
R4	Sürgü Dam, surrounding of weir, steppe, 1320-1330 m, 01.iv.2016
R5	Sürgü Dam, southeast of Hudut village, steppe, 1410-1430 m, 01.iv.2016
R6	Sürgü Dam, southeast of Hudut village, oak forest, 1430-1450 m, 01.iv. 2016
R7	Enterance road of Sürgü Dam, steppe, 1320-1350 m, 12.v.2016
R8	Enterance road of Sürgü Dam, *Juniperus* community and open area, 12.v.2016
R9	Sürgü Dam, surrounding of weir, streamside-open area, 1250 m, 12.v.2016
R10	Sürgü Dam, surrounding of weir, steppe, 1320-1330 m, 12.v.2016
R11	Sürgü Dam, southeast of Hudut village, steppe, 1410-1430 m, 12.v.2016
R12	Sürgü Dam, southeast of Hudut village, oak forest, 1430-1450 m, 12.v.2016
R13	Enterance road of Sürgü Dam, steppe, 1320-1350 m, 07.vii.2016
R14	Enterance road of Sürgü Dam, *Juniperus* community and open area, 07.vii.2016
R15	Sürgü Dam, surrounding of weir, streamside-open area, 1250 m, 07.vii.2016
R16	Sürgü Dam, surrounding of weir, steppe, 1320-1330 m, 07.vii.2016
R17	Sürgü Dam, Southeast of Hudut village, steppe, 1410-1430 m, 07.vii.2016
R18	Sürgü Dam, southeast of Hudut village, oak forest, 1430-1450 m, 07.vii.2016

R: Lokalite number — Ph: Phanerophytes — Ch: Chamaephytes
G: Geophytes — Th: Therophytes — H: Hemicryptophytes
End.: Endemic — Sp: Spring — W: Winter
A: Autumn — Sm: Summer — m: meter
Medit.: Mediterranean — E.Medit.: East Mediterranean
Euro-Sib.: Euro-Siberian — HTC: Hatice Tosyagülü Çelik
Ir.-Tur.: Irano-Turanian

3. RESULTS

The list of the identified plants is given below in alphabetical order.

Amaranthaceae

Amaranthus albus L., Th, R15, HTC 132

Amaryllidaceae

Ixiolirion tataricum (Pall.) Schult. & Schult.f. subsp. *montanum* (Labill.) Takht., G, Ir.-Tur., R10, HTC 58

Apiaceae

Eryngium campestre L. var. *virens* Link, H, R17, HTC 183

Grammosciadium macrodon Boiss., H, Ir.-Tur., R13, HTC 99

Lecokia cretica (Lam.) DC., H, R18, HTC 97

Prangos peucedanifolia Fenzl, H, Ir.-Tur., R13, HTC 100

Scandix stellata Banks & Sol., Th, R16, HTC 158

Torilis leptophylla (L.) Rchb.f., H, R16, HTC 159

Aristolochiaceae

Aristolochia maurorum L., H, Ir.-Tur., R10, HTC 59

Asclepiadaceae

Vincetoxicum canescens (Willd.) Decne. subsp. *canescens*, H, R10, HTC 60

Asteraceae

Anthemis tinctoria L. var. *tinctoria*, H, R11, HTC 95

Carduus pycnocephalus subsp. *albidus* (M.Bieb.) Kazmi, Th, R7, HTC 34

Centaurea depressa M.Bieb., Th, R10, HTC 61

Centaurea consanguinea DC., H, Ir.-Tur., End., R13, HTC 101

Centaurea iberica Spreng., H, R16, HTC 160

Centaurea solstitialis L. subsp. *solstitialis*, Th, R16, HTC 161

Centaurea virgata Lam., H, Ir.-Tur., R13, HTC 102

Chardinia orientalis (L.) Kuntze, Th, Ir.-Tur., R16, HTC 162

Cichorium intybus L., H, R13, HTC 103

Cirsium vulgare (Savi) Ten., H, R15, HTC 133

Crepis sancta (L.) Bornm., Th, R16, HTC 164

Crepis foetida L. subsp. *foetida*, Th, R13, HTC 104

Crupina crupinastrum (Moris) Vis., Th, R13, HTC 105

Echinops pungens Trautv. var. *pungens*, H, Ir.-Tur., R16, HTC 165

Gundelia tournefortii L. var. *armata* Freyn & Sint., H, Ir.-Tur., R13, HTC 106

Helichrysum plicatum DC. subsp. *plicatum*, H, R14, HTC 128

Inula oculus-christi L., H, Euro-Sib., R14, HTC 129

Jurinea cataonica Boiss. & Hausskn., Ir.-Tur., End., R13, HTC 107

Lapsana communis subsp. *intermedia* (M.Bieb.) Hayek, Th, R14, HTC 130

Picnomon acarna (L.) Cass., Th, Medit., R13, HTC 108

Rhagadiolus angulosus (Jaub. & Spach) Kupicha, Th, Ir.-Tur., R16, HTC 166

Scorzonera kotschyi Boiss., H, Ir.-Tur., R14, HTC 131

Scorzonera tomentosa L., H, Ir.-Tur., End., R13, HTC 109

Senecio vernalis Waldst. & Kit., Th, R13, HTC 110

Xanthium strumarium L. subsp. *strumarium*, Th, R15, HTC 134

Xeranthemum annuum L., Th, R13, HTC 111

Boraginaceae

Alkanna megacarpa A.DC., H, Ir.-Tur., End., R16, HTC 167

Anchusa azurea Mill. var. *azurea* , H, R16, HTC 168

Buglossoides arvensis (L.) I.M.Johnst., Th, R15, HTC 135

Echium italicum L., H, Medit., R13, HTC 112

Onosma sericeum Willd., H, Ir.-Tur., R16, HTC 169

Brassicaceae

Aethionema arabicum (L.) Andrz. ex DC., Th, R10, HTC 62

Alyssum desertorum Stapf. var. *desertorum*, Th, R10, HTC 63

Alyssum minus L. (Rothm.) var. *minus*, Th, R7, HTC 35

Alyssum strigosum Banks & Sol. subsp. *strigosum*, Th, R7, HTC 36

Arabis aucheri Boiss., Th, R4, HTC 17

Capsella bursa-pastoris (L.) Medik., Th, R1, HTC 1

Cardaria draba (L.) Desv. subsp. *draba*, H, R1, HTC 2

Clypeola jonthlaspi L., Th, R4, HTC 18

Erophila verna (L.) Chevall. subsp. *verna*, Th, R1, HTC 3

Erysimum repandum L., Th, R16, HTC 170

Fibigia macrocarpa (Boiss.) Boiss., H, R10, HTC 64

Matthiola longipetala (Vent.) DC. subsp. *bicornis* (Sibth. & Sm.) P.W.Ball, Th, R7, HTC 37

Nasturtium officinale R.Br., H, R3, HTC 14

Neslia apiculata Fisch., C.A.Mey. & Avé-Lall., Th, R7, HTC 38

Thlaspi perfoliatum L., Th, R7, HTC 39

Campanulaceae

Legousia pentagonia (L.) Thell., Th, E.Medit., R10, HTC 65

Caryophyllaceae

Cerastium dichotomum L. subsp. *dichotomum*, Th, R7, HTC 40

Dianthus strictus Banks & Sol. var. *gracilior* (Boiss.) Reeve., H, R10, HTC 66

Holosteum umbellatum L. var. *umbellatum*, Th, R10, HTC 67

Petrorhagia cretica (L.) P.W.Ball & Heywood, Th, R13, HTC 113

Silene chlorifolia Sm., H, Ir.-Tur., R9, HTC 52

Stellaria media (L.) Vill. subsp. *media* Th, R1, HTC 157

Vaccaria pyramidata Medik. var. *grandiflora* Ser, Th, R10, HTC 68

Velezia rigida L., Th, R10, HTC 69

Chenopodiaceae

Chenopodium album L. subsp. *album* var. *album*, Th, R10, HTC 70

Cistaceae

Fumana aciphylla Boiss., H, R13, HTC 114

Helianthemum ledifolium (L.) Mill. var. *ledifolium*, Th, R16, HTC 171

Convolvulaceae

Convolvulus arvensis L., H, R10, HTC 71

Crassulaceae

Sedum album L., H, R2, HTC 11

Cupressaceae

Juniperus oxycedrus L. subsp. *oxycedrus*, Ph, R2, HTC 12

Cyperaceae

Cyperus longus L., H, R15, HTC 136

Dipsacaceae

Dipsacus laciniatus L., H, R15, HTC 137

Scabiosa argentea L., H, R16, HTC 172

Elaeagnaceae

Elaeagnus angustifolia L., Ph, R3, HTC 15

Equisetaceae

Equisetum arvense L., R3, HTC 16

Euphorbiaceae

Euphorbia cheiradenia Boiss. & Hohen., H, Ir.-Tur., R10, HTC 72

Fabaceae

Astragalus gummifer Labill., Ch, R5, HTC 28

Cicer pinnatifidum Jaub. & Spach, Th, R10, HTC 73

Coronilla cretica L., Th, E.Medit., R15, HTC 138

Coronilla scorpioides (L.) W.D.J.Koch, Th, R10, HTC 74

Coronilla varia L. subsp. *varia*, H, R10, HTC 75

Lathyrus cicera L., Th, R7, HTC 41

Lathyrus inconspicuus L. var. *inconspicuus*, Th, R10, HTC 76

Lathyrus sativus L., Th, R9, HTC 53

Lens orientalis (Boiss.) Schmalh., Th, R10, HTC 77

Lotus corniculatus L. var. *corniculatus*, H, R15, HTC 139

Lotus gebelia Vent. var. *gebelia*, H, R15, HTC 140

Medicago radiata L.,Th, Ir.-Tur., R10, HTC 78

Medicago rigidula (L.) All. var. *rigidula*, Th, R10, HTC 79

Medicago sativa L. subsp. *sativa*, H, R9, HTC 54

Ononis spinosa L. subsp. *leiosperma* (Boiss.) Širj., H, R15, HTC 142

Trifolium aintabense Boiss. & Hausskn., Th, End., R13, HTC 115

Trifolium arvense L. var. *arvense*, Th, R13, HTC 116

Trifolium campestre Schreb., Th, R16, HTC 173

Trifolium pauciflorum d'Urv., Th, E.Medit., R16, HTC 174

Trifolium physodes M.Bieb. var. *physodes*, H, Medit., R4, HTC 24

Trifolium pilulare Boiss., Th, R13, HTC 117

Trifolium pratense L. var. *pratense*, H, R15, HTC 143

Trifolium scabrum L., Th, R13, HTC 118

Trigonella coelesyriaca Boiss., Th, Ir.-Tur., R10, HTC 80

Vicia ervilia (L.) Willd., Th, R10, HTC 81

Fagaceae

Quercus cerris L. var. *cerris*, Ph, Medit., R6, HTC 29

Quercus infectoria G. Olivier subsp. *boissieri* (Reut.) O.Schwarz, Ph, R6, HTC 30

Geraniaceae

Erodium cicutarium (L.) L'Hér. subsp. *cicutarium*, Th, R7, HTC 42

Geranium rotundifolium L., Th, R12, HTC 98

Pelargonium endlicherianum Fenzl, H, R13, HTC 119

Globulariaceae

Globularia trichosantha Fisch. & C.A.Mey. subsp. *trichosantha*, H, Ir.-Tur., R10, HTC 82

Hypericaceae

Hypericum scabrum L., H, Ir.-Tur., R4, HTC 19

Hypericum thymbrifolium Boiss. & Noë, H, Ir.-Tur., End., R13, HTC 120

Illecebraceae

Paronychia kurdica Boiss. subsp. *kurdica* var. *kurdica*, H, R7, HTC 43

Lamiaceae

Ajuga chamaepitys (L.) Schreb. subsp. *laevigata* (Banks & Sol.) P.H.Davis, H, Ir.-Tur., R10, HTC 83

Lamium amplexicaule L., Th, Euro-Sib., R7, HTC 44

Marrubium globosum Montbret & Aucher ex Benth. subsp. *globosum*, H, Ir.-Tur., End., R10, HTC 84

Mentha longifolia (L.) L. subsp. *typhoides* (Briq.) Harley var. *typhoides*, H, R15, HTC 141

Phlomis kurdica Rech.f., H, R11, HTC 96

Prunella vulgaris L., H, Euro-Sib., R15, HTC 144

Salvia multicaulis Vahl, H, Ir.-Tur., R17, HTC 184

Salvia viridis L., Th, Medit., R7, HTC 45

Scutellaria orientalis L. subsp. *pinnatifida* J.R.Edm., H, R7, HTC 46

Teucrium chamaedrys L. subsp. *chamaedrys*, H, Euro-Sib., R16, HTC 175

Teucrium multicaule Montbret & Aucher ex Benth., H, Ir.-Tur., R16, HTC 176

Teucrium polium L., Ch, R7, HTC 47

Thymus kotschyanus Boiss. & Hohen. var. *kotschyanus*, Ch, Ir.-Tur., R17, HTC 185

Ziziphora capitata L., H, Ir.-Tur., R16, HTC 177

Liliaceae

Allium scorodoprasum L. subsp. *rotundum* (L.) Stearn, G, Medit., R10, HTC 85

Bellevalia sarmatica (Pall. ex Miscz.) Woronow, G, R4, HTC 20

Gagea fibrosa (Desf.) Schult. & Schult.f., G, R1, HTC 4

Muscari neglectum Guss. ex Ten., G, R1, HTC 5

Ornithogalum narbonense L., G, Medit., R4, HTC 21

Linaceae

Linum mucronatum Bertol. subsp. *mucronatum*, H, Ir.-Tur., R7, HTC 48

Lythraceae

Lythrum salicaria L., H, Euro-Sib., R9, HTC 55

Malvaceae

Malva neglecta Wallr., Th, R4, HTC 22

Orchidaceae

Dactylorhiza iberica (M.Bieb. ex Willd.) Soó, G, E.Medit., R15, HTC 145

Papaveraceae

Fumaria asepala Boiss., Th, Ir.-Tur., R4, HTC 23

Papaver fugax Poir. var. *fugax*, H, R10, HTC 86

Papaver rhoeas L., Th, R10, HTC 87

Roemeria hybrida (L.) DC. subsp. *hybrida*, Th, R4, HTC 25

Plantginaceae

Plantago lanceolata L., H, R15, HTC 146

Plumbaginaceae

Acantholimon acerosum (Willd.) Boiss. var. *acerosum*, Ch, R17, HTC 186

Poaceae

Aegilops neglecta Reg. ex Bertol., Th, Medit., R13, HTC 121

Aegilops umbellulata Zhuk. subsp. *umbellulata*, Th, Ir.-Tur., R13, HTC 122

Avena sterilis L. subsp. *sterilis*, Th, R7, HTC 49

Bromus japonicus Thunb. subsp. *japonicus*, Th, R1, HTC 6

Bromus tectorum L. subsp. *tectorum* , Th, R1, HTC 7

Briza minor L., Th, R13, HTC 123

Chrysopogon gryllus (L.) Trin. subsp. *gryllus*, H, R16, HTC 163

Dactylis glomerata L. subsp. *glomerata*, H, Euro-Sib., R16, HTC 178

Hordeum bulbosum L., H, R16, HTC 179

Phragmites australis (Cav.) Trin. ex Steud., H, Euro-Sib., R9, HTC 56

Poa bulbosa L., H, R13, HTC 124

Rostraria cristata (L.) Tzvelev var. *cristata*, Th, R13, HTC 125

Stipa arabica Trin. & Rupr., H, Ir.-Tur., R4, HTC 26

Taeniatherum caput-medusae (L.) Nevski subsp. *crinitum* (Schreb.) Melderis, Th, Ir.-Tur., R13, HTC 126

Polygonaceae

Polygonum aviculare L., Th, R15, HTC 147

Polygonum setosum Jacq., H, Ir.-Tur., R13, HTC 127

Rumex tuberosus L. subsp. *tuberosus*, H, R10, HTC 88

Primulaceae

Androsace maxima L., Th, R7, HTC 50

Ranunculaceae

Adonis aestivalis L. subsp. *aestivalis*, Th, R10, HTC 89

Ceratocephala falcatus (L.) Pers., Th, R1, HTC 8

Ranunculus arvensis L., Th, R10, HTC 90

Ranunculus sericeus Banks & Sol., H, Ir.-Tur., R11, HTC 33

Resedaceae

Reseda lutea L. var. *lutea*, H, R10, HTC 91

Rosaceae

Agrimonia eupatoria L., H, R15, HTC 148

Cerasus microcarpa (C.A.Mey.) Boiss subsp. *tortuos*a (Boiss. & Hausskn.) Browicz, Ph, Ir.-Tur., R6, HTC 31

Cotoneaster nummularia Fisch. & C.A.Mey., Ph, R6, HTC 32

Crataegus monogyna Jacq. subsp. *monogyna*, Ph, R16, HTC 180

Potentilla recta L., H, R15, HTC 149

Pyrus elaeagnifolia Pall. subsp. *kotschyana* (Boiss.) Browicz, Ph, R15, HTC 150

Rosa canina L., Ph, R15, HTC 151

Rubus sanctus Schreb., Ph, R15, HTC 152

Sanguisorba minor L. subsp. *magnolii* (Spach) Cout., H, R10, HTC 92

Rubiaceae

Callipeltis cucullaria (L.) Steven, Th, Ir.-Tur., R1, HTC 9

Cruciata taurica (Pall. ex Willd.) Ehrend., H, Ir.-Tur., R1, HTC 10

Galium tricornutum Dandy, Th, Medit., R9, HTC 57

Salicaceae

Salix cinerea L., Ph, Euro-Sib., R15, HTC 153

Scrophulariaceae

Anarrhinum orientale Benth., H, Ir.-Tur., R16, HTC 181

Linaria chalepensis (L.) Mill. var. *chalepensis* , Th, E.Medit., R10, HTC 93

Parentucellia latifolia (L.) Caruel subsp. *flaviflora* (Boiss.) Hand.-Mazz., Th, R8, HTC 51

Scrophularia libanotica Boiss. subsp. *libanotica* var. *libanotica*, H, E.Medit., R4, HTC 27

Veronica anagallis-aquatica L. subsp. *anagallis-aquatica*, H, R15, HTC 154

Tamaricaceae

Tamarix smyrnensis Bunge, Ph, R15, HTC 155

Uricaceae

Urtica dioica L., H, Euro-Sib., R15, HTC 156

Valerianaceae

Valerianella vesicaria (L.) Moench, Th, R10, HTC 94

Violaceae

Viola kitaibeliana Roem. & Schult., Th, R2, HTC 13

Zygophyllaceae

Tribulus terrestris L., Th, R16, HTC 182

4. DISCUSSION AND CONCLUSION

During this study, by the identifying the collected plant samples 189 taxa belonging to 155 genera in the 49 families were determined. Among these taxa, one belongs to *Pteridophyta* and one belongs to *Gymnospermae*. The rest of the taxa belong to the *Angiospermae* plant group, of which 166 are *Dicotyledonae* and 21 are *Monocotyledonae*. A summary of the numerical data is given in Table 3.

Table 3. Floristic properties

Section	Class	Subclass	Taxa Number
Pteridophyta			1
Spermatophyta	*Gymnospermae*		1
	Angiospermae	*Dicotyledonae*	166
		Monocotyledonae	21

Asteraceae, Fabaceae, Lamiaceae, Brassicaceae and Poaceae are the richest families that take the first lines in terms of taxa number according to the Flora of Turkey (Davis, 1965-1985; Davis *et al*., 1988; Güner *et al*., 2000). These first five families generally maintain almost the same order in all the floristic study conducted in Turkey. When it's looked at the families to which belong the taxa in this study, the first five families are Asteraceae (27), Fabaceae (25), Brassicaceae (15), Lamiaceae (14), and Poaceae (14) (Figure 2). This result is in accordance with the family order in the Flora of Turkey (Davis, 1965-1985; Davis *et al*., 1988; Güner *et al*., 2000).

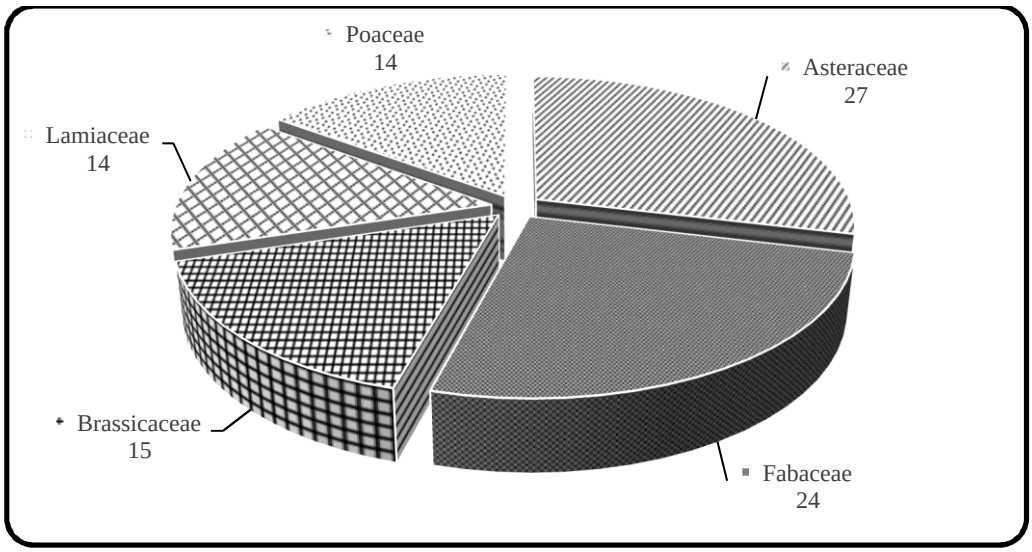

Figure 2. Number of determined taxa in the large families

When it's looked at the distributions of the taxa determined in this study to the phytogeographical regions, there is a ranking of Irano-Turanian (46), Mediterranean (9), Euro-Siberian (9), East Mediterranean (7) and unknown (118) (Figure 3). This result supports the opinion that the study area is in the Irano-Turanian phytogeographical region.

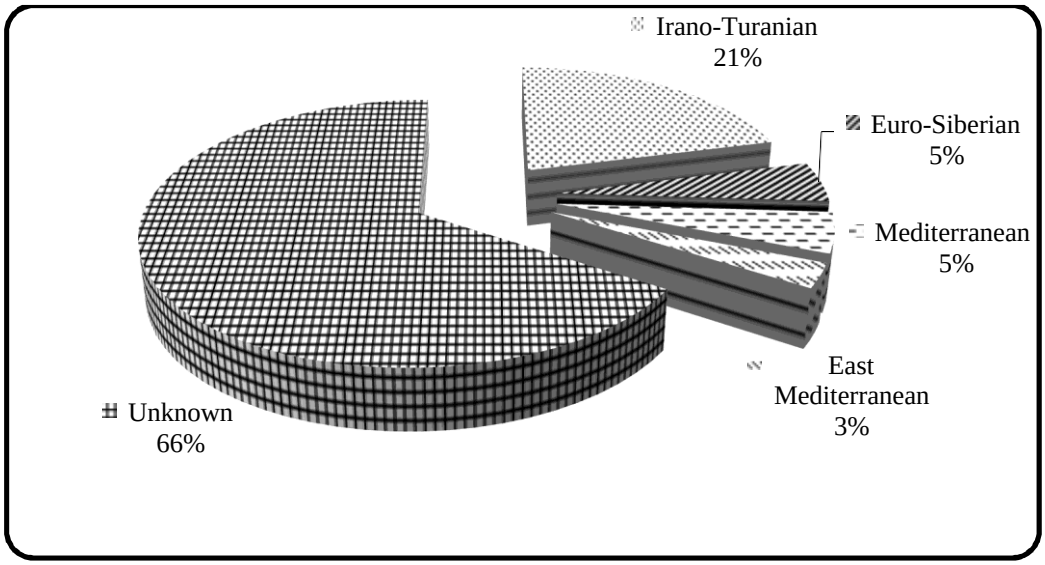

Figure 3. Distribution of the determined taxa in phytogeographical regions

The Irano-Turanian phytogeographical region is characterized with hemicryptophytes and chamaephytes (Zohary, 1973). The life forms of the taxa determined in the study area were evaluated according to Raunkiær (1934). One of the taxa determined in the study area is a fern. The order of life forms in the study area is therophytes (84), hemicryptophytes (81), phanerophytes (12), geophytes (7) and chamaephytes (5). In this study, being in the first order for hemicryptophytes is another indication to be located in the Irano-Turano phytogeographic region (Figure 4).

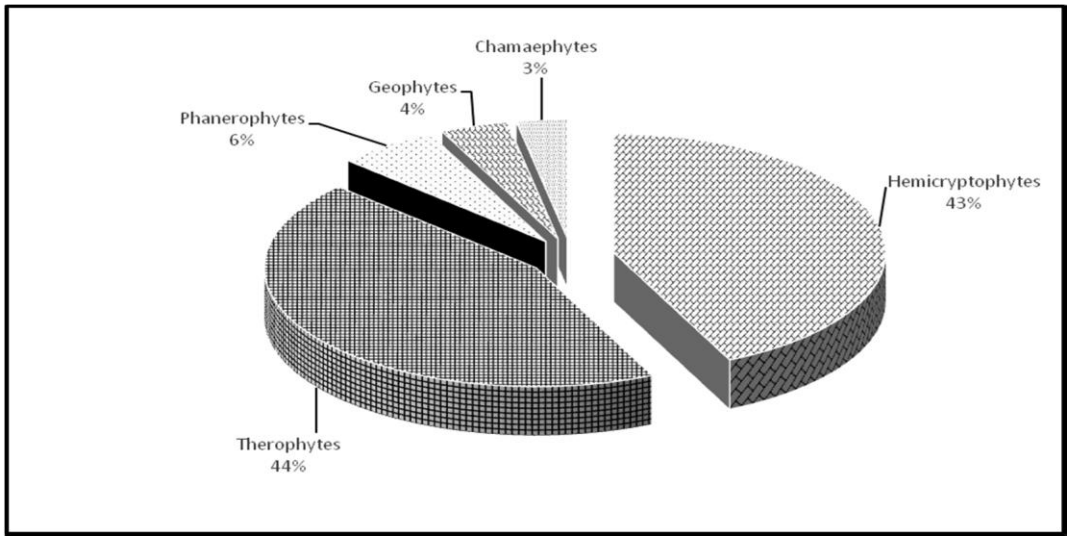

Figure 4. Life forms of the identified taxa according to Raunkiær (1934)

The total number of endemic taxa in Turkey is 3778, and the overall endemism rate is 31.4% (Erik and Tarikahya, 2004). The number of endemic taxa in the area is 7, and the endemism rate is 3.7%. The rate of endemism in the study area is very low compared to the rate of general endemism in Turkey. Also according to Ekim et al (2000), the endemic taxa found in the area are seen in the Lower Risk categories generally in the least-concern (lc) and near threatened (nt) subcategories when looking at the IUCN hazard categories. The endemic taxa determined in the study area and IUCN hazard categories are; *Trifolium aintabense* (LR-nt), *Centaurea consanguinea* DC. (LR-lc), *Jurinea cataonica* Boiss. & Hausskn. (LR-lc), *Scorzonera tomentosa* L. (LR-lc), *Alkanna megacarpa* A.DC. (LR-lc), *Hypericum thymbrifolium* Boiss. & Noë (LR-nt), *Marrubium globosum* Montbret & Aucher ex Benth. subsp. *globosum* (LR-nt).

The 31 taxa names identified in this study were determined differently by Güner et al. (2012) and EuroMed Plant Base (Table 4).

Table 4. Taxa names that change according to A Checklist of the Flora of Turkey (Vascular Plants), and EuroMed Plant Base

Taxa Names in the Flora of Turkey (Davis, 1965-1985; Davis *et al.*, 1988; Güner *et al.*, 2000)	**Taxa names according to A Checklist of the Flora of Turkey (Vascular Plants). (Güner *et al.*,, 2012).**	**Taxa names according to EuroMed Plant Base**
Ixiolirion tataricum subsp. *montanum*	*Ixiolirion tataricum* var. *tataricum*	*Ixiolirion tataricum* var. *tataricum*
Eryngium campestre var. *virens*	*Eryngium campestre* var. *virens*	*Eryngium campestre*
Malabaila lasiocarpa	*Malabaila lasiocarpa*	*Trigonosciadium lasiocarpum*
Anthemis tinctoria var. *tinctoria*	*Cota tinctoria* var. *tinctoria*	*Cota tinctoria*
Centaurea depressa	*Cyanus depressus*	*Cyanus depressus*
Centaurea solstitialis subsp. *solstitialis*	*Centaurea solstitialis* subsp. *solstitialis*	*Centaurea solstitialis*
Rhagadiolus angulosus	*Garhadiolus hedypnois*	*Garhadiolus hedypnois*
Senecio vernalis	*Senecio vernalis*	*Senecio leucanthemifolius* subsp. *vernalis*
Onosma sericeum	*Onosma sericea*	*Onosma sericea*
Alyssum desertorum	*Alyssum desertorum*	*Alyssum turkestanicum*
Alyssum minus	*Alyssum simplex*	*Alyssum simplex*
Neslia apiculata	*Neslia paniculata* subsp. *thracica*	*Neslia paniculata* subsp. *thracica*
Thlaspi perfoliatum		*Microthlaspi perfoliatum*
Holosteum umbellatum var. *umbellatum*	*Holosteum umbellatum* var. *umbellatum*	*Holosteum umbellatum L.* subsp. *umbellatum*
Vaccaria pyramidata var. *grandiflora*	*Vaccaria hispanica*	*Vaccaria hispanica*
Astragalus gummifer	*Astragalus gummifer*	*Astracantha gummifera*
Coronilla cretica	*Securigera cretica*	*Securigera cretica*
Coronilla varia subsp. *varia*	*Securigera varia*	*Securigera varia*
Lens orientalis	*Lens culinaris* subsp. *orientalis*	*Lens culinaris* subsp. *orientalis*
Trigonella coelesyriaca	*Trigonella coelesyriaca*	*Trigonella caelesyriaca*
Quercus infectoria subsp. *boissieri*	*Quercus infectoria* subsp. *veneris*	
Allium scorodoprasum subsp. *rotundum*	*Allium scorodoprasum* subsp. *rotundum*	*Allium rotundum*
Bellevalia sarmatica	*Bellevalia speciosa*	*Bellevalia speciosa*
Hypecoum imberbe	-	*Hypecoum imberbe*
Bromus tectorum subsp. *tectorum*	*Bromus tectorum*	*Anisantha tectorum*
Ceratocephala falcatus	*Ceratocephala falcata*	*Ceratocephala falcata*
Cerasus microcarpa subsp. *tortuos*a	*Cerasus microcarpa* subsp. *tortuos*a	*Prunus microcarpa*
Cotoneaster nummularia	*Cotoneaster nummularius*	*Cotoneaster nummularius*
Sanguisorba minor subsp. *magnolii*	*Sanguisorba verrucosa*	*Sanguisorba verrucosa*
Callipeltis cucullaria	*Callipeltis cucullaris*	*Callipeltis cucullaris*
Erophila verna subsp. *verna*	*Draba verna*	*Erophila verna* subsp. *verna*

The family names of 15 taxa identified in this study were also determined differently by Güner et al. (2012) and EuroMed Plant Base (Table 5).

Table 5. Families names that change according to A Checklist of the Flora of Turkey (Vascular Plants) and EuroMed Plant Base

Taxa Names	Family Names in the Flora of Turkey (Davis, 1965-1985; Davis *et al.*, 1988; Güner *et al.*, 2000)	Family Names according to A Checklist of the Flora of Turkey (Vascular Plants). (Güner *et al.*,, 2012).	Family names according to EuroMed Plant Base
Ixiolirion tataricum subsp. *montanum*	Amaryllidaceae	Ixioliriaceae	Ixioliriaceae
Vincetoxicum canescens subsp. *canescens*	Asclepiadaceae	Apocynaceae	Asclepiadaceae
Dipsacus laciniatus	Dipsacaceae	Caprifoliaceae	-
Scabiosa arge	Dipsacaceae	Caprifoliaceae	-
Globularia trichosantha subsp. *trichosantha*	Globulariaceae	Plantaginaceae	Globulariaceae
Hypericum scabrum	Hypericaceae	Hypericaceae	Clusiaceae
Hypericum thymbrifolium	Hypericaceae	Hypericaceae	Clusiaceae
Paronychia kurdica subsp. *kurdica* var. *kurdica*	Illecebraceae	Caryophyllaceae	Caryophyllaceae
Allium scorodoprasum subsp. *rotundum*	Liliaceae	Amaryllidaceae	Amaryllidaceae
Bellevalia sarmatica	Liliaceae	Asparagaceae	Asparagaceae
Muscari neglectum	Liliaceae	Asparagaceae	Asparagaceae
Ornithogalum narbonense	Liliaceae	Asparagaceae	Asparagaceae
Parentucellia latifolia subsp. *flaviflora*	Scrophulariaceae	Orobanchaceae	Scrophulariaceae
Veronica anagallis-aquatica subsp. *anagallis-aquatica*	Scrophulariaceae	Plantaginaceae	Scrophulariaceae
Valerianella vesicaria	Valerianaceae	Caprifoliaceae	-

This study contributed to the flora of the Sürgü town in the borders of the Doğanşehir district of Malatya. A list is given by taking into consideration the current taxonomic status of the determined taxa according to EuroMed Plant Base and The Turkey Plants List (Vascular Plants). With this list, plant taxa were evaluated in terms of chorology, life form and endemism.

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