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Research Article

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Bee Plants of Çatak Valley and Determination of Nectar, Polen and Secretion Groups (Van/Turkey)

Abstract

In this study is aimed to determine the important plant taxa in terms of beekeeping in Çatak Valley (Van). The study was carried out as a result of the scientific excursions carried out for many years in the research zone. In addition to ecologically important plants, some agricultural and horticultural plants are spread in the study area. For this reason, the area is preferred by beekeepers. As a result of this study, 733 natural and 7 cultures, a total of 740 taxa was determined to be important for beekeeping. 64 taxa of these plants were determined as endemic. Nectar, pollen and secretion groups of bee plants grown in the research area were determined and presented. The importance of beekeeping in the region is emphasized.

INTRODUCTION

The Regnum of plants has about 500000 members worldwide. About 1000 of them are *Gymnospermae* members and about 300,000 of them are *Angiospermae* (Anşin, 1993). It is assumed that approximately 2000 plant Taxa are added to flowering plants every year in the World (Stace, 1980). About 3000 plant species are used for nutrition purposes only. About 300 of these plant species are grown widely. 12 of these growing plant species supply 90 percent of the World food stock (Mc. Groger, 1976). The number of ecological plants grown in Turkey since 1999 is 92 (Gürel et al., 2001). Although the European continent is twelve times larger than Turkey, it have only 2750 taxa as endemic, total of 12.000 plant species (Tutin et al., 1964-1980). According to recent data, there are about 9500 species of plants in Turkey (Güner et al., 2000; Özhatay and Kültür, 2002). 3500 taxa of them are endemic (Ekim, 1997). 1181 species of these taxa are of great importance for the Eastern Anatolia Region (Akman, 1993). We also know that every year in Turkey to 40 plant taxa of flora included (Özhatay et al., 2000). Considering this data, the richness of the Turkish flora is clearly understood.

Van Lake Basin is located in Eastern Anatolia region of Turkey. This region is the richest region in terms of species and endemic taxon diversity. Van, Hakkari, Agrı and Bitlis of the Eastern Region, which have a particularly important place in flora, have more endemism rates (Ekim, 1990). The research area of study is between 940-3634 m. The region is under the influence of continental and Mediterranean climate (Emberger, 1955). Relative humidity in the region is high in the winter season and average in the summer is as low as 40% (Erinç, 1965). Low humidity in summer has an increasing effect on honey Nectar (Beyazoğlu, 1986). Cultivated areas are limited and livestock are popular.

The biggest problem facing the rapidly growing world population will be the need for food depending on nutrition. Thus, research on botanical and animal productivity in farming has been a Nessity. Thus, it requires the evaluation of the floristic structure in terms of farming and the determination of the appropriate method depending on the biological wealth. It forms part of it in beekeeping.

The history of bees and honey in the world goes back to 7000 B.C in Spain. As can be understood from the inscriptions, apiculture in Anatolia started at 3000 B.C. (Kumova and Korkmaz, 2001). Turkey is increasing the honey production since the 1950s. However, the current rate of forest and pasture in Turkey has dropped to 20%. Turkey is beekeeping located in ranked third (Tutkun, 2000). There are 80513551 bee colonies for 2000-2012 period in Turkey. Turkey, after China ranks 2nd in terms of bee colonies, it is followed 15.85 kg of honey is obtained from a colony in Turkey. In Argentina, 49.1 kg of honey from a colony and 25.5 kg of honey in the USA are obtained (Anonymous, 2017).

Although Turkey is much above the world in terms of the amount of honey production, the amount of honey obtained from each colony is very low. This indicates that resources are not being used correctly and that insufficient efficiency is achieved in Turkey. Phytochemicals are natural plant products that are used directly or indirectly in many sectors. These secondary products are abundant in honey and its trade is known to increase day by day (Coşkun and Inci, 2020; Şenkal, 2020).

The lives of living beings on Earth show ecological dependence on each other. Some plants need foreign pollinators during pollination (Özbek, 1979). The Honeybee (*Apis mellifera* L.) mainly serves as a pollination for plants requiring foreign pollen. Honeybees is the best insect for pollination (Tutkun, 2000). The mutual relationship between honeybee and honey plants is great importance for both bees and plants. For honey plants, the importance of bees can be collected under some headings. These provide pollination (Blazyte-Cereskiene et al., 2010; Reyes-Carrillo et

al., 2007); increase in seed production (Sushil et al., 2013), as well as increase in seed quality (Yucel and Duman, 2005); exracting nitrogen by plants via indirect ways (Mishra et al., 2013) and distrubution of some bio-control agents. It has been proved by a study carried out in USA that the value of product provided by honeybee through pollination is 15-20 times higher than those provided through beewax and honey (Gürel et al., 2001; Tutkun, 2000). On the other hand, the benefit that plants make for bees is that bees use items in plants such as pollen, Nectar and honeydew as food source. Stuctures of some plants such as trunk and branch provide shelter for bees. And also Nectar of some plants are used for bees to be protected against parasites, Neem oil (Qayyoum et al., 2013) and thymol Powder (Ahmad et al., 2013). So there is a close contion between area vegetation and honeybees. Honeybees should be assesed together with cultivated plants in farming plannings.

Honey bees are in constant search for feeding and honey. Bees collect from some plants pollen, from some plants Nectar, from some plants secretion and from some plants Nectar and pollen. Pollen only found in flowers, in certain parts of some flowers, some plants have Nectar on the stem, branches, leaves and leaf stalks. The secretion is found only in organs such as body, branch, leaf, leaf stem and fruit. The environment has a great importance in the quality of honey. The quality of the surrounding Nectar has a great impact on honey. Bees go to the bodies such as woody and herbaceous plants to collect honey composition to make honey. Nectar and secretory groups cannot be determined by palynological studies in honey (Tutkun, 2000; James, 1998). Therefore, plants in Nectar and secretory groups need to be identified.

Turkey has a continental characteristic with three important flora regions (Terzioğlu, 1994). The rich flora of Turkey has an important position in terms of its appropriate ecology, ideal habitats, genetic variation in the bee population and colony presence (Tutkun, 2000).

It is known that bees use approximately 20000 plant species in the world from a total of 250000 plant varieties. (James, 1998). The number of species determined as bee plants in the world is approximately 260 and all of them are naturally grown in Turkey. Each region hosts different indigenous plants for beekeeping (Kumova and Korkmaz, 2001). There are approximately 200 bee plants in each region in Turkey, the density and distribution varies by region and very valuable honey is obtained from these regions (Tutkun, 2000).

This study aims to provide benefits in many areas such as pharmacy, palinology, beekeeping, agriculture and landscaping by determining the wealth and diversity of plants in the area.

MATERIAL and METHODS

This study is based on some excursions carried out from time to time between years of 2011-2012 in Çatak Valley, Van (Fig. 1). Excursions were carried out during March-November which is vegetation period in the valley. The density and abundancy of bees and bee plants in the area have been observed during the study. Pant materials have been gathered from area during study. The diagnosis of the materials have been done after proper drying methods (Güner et al., 2000; Davis, 1965-1985; Baytop, 1994). Bee plants detected in the basin were controlled during many floristic studies carried out before as well (Öztürk and Behçet, 1999; İlarslan, 2000). And also grouping of detected plants whose pollen, Nectar, Nectar-pollen and honeydew were previously analysised by several researchers have been done according to plant categories (James, 1998; Ekim, 1987; Anonymus, 2004).

Arrangements of taxa have been given alphabetically şn the presentation of findings. As taxon number is very high, taxa after genus have been given alphabetically. Endemics have clearly been presented. In this study, plant families in order, its name in Latin, “Cultivated” if it is cultivated,

"Endemic" if it is endemic, its name in Turkish and class of Nectar-pollen-honeydew have been presented (Table 1).

ABBREVATION

CV. :Cultivated Pant
END. :Endemic
N :Nectar
P :Pollen
S :Secretion

RESULTS

General vegetation

Floristic structure in Botan valley in Çatak (Van) has xeromorphic steppe vegetation. You can see bush formations in some places and rarely tree formations in some places. You can rarely come across forest climax. Even if you come across, they have been converted into bush formations by the influence of biotic factors. Dominant vegetation type in study area is generally herbaceous formations characterized by steppe.

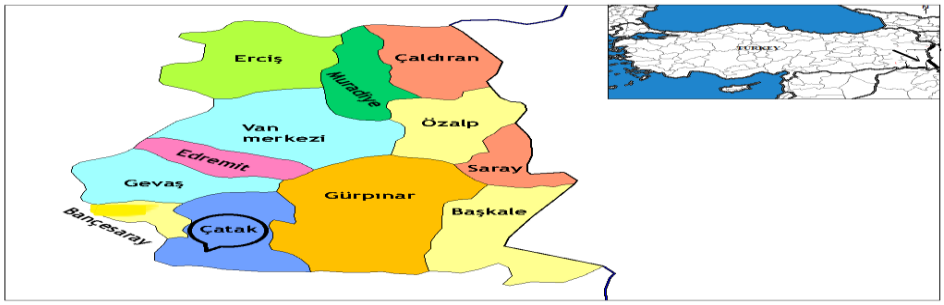

Figure1. Map of Çatak Valley

Table 1. Bee plants of Çatak Valley and determination of nectar, polen and secretion groups (Van/Turkey)

	Bee Plants	Local name	Resource
	PTERIDOPHYTA		
1	**EQUISETACEAE**		
1	*Equisetum ramosissimum* Desf.	Atkuyruğu	P
2	*E. arvense* L.	Atkuyruğu	P
	SPERMATOPHYTA		
	GYMNOSPERMAE		
2	**CUPRESSACEAE**		
3	*Juniperus oxycedrus* L.	Ardıç	S
4	*J. excelsa* M. Bieb. subsp. *excelsa*	Ardıç	S
3	**EPHEDRACEAE**		
5	*Ephedra major* Host	Efedra	P
	ANGIOSPERMAE		
	DICOTYLEDONEAE		
4	**ACANTHACEAE**		
6	*Acanthus dioscoridis* L. var. *dioscoridis*	Ayıpençesi	N-P
5	**ACERACEAE**		
7	*Acer monspessulanum* L. subsp. *cinerascens* (Boiss.) Yalt.	Akçaağaç	P-S
8	*A. monspessulanum* L. subsp. *ibericum* (M.Bieb. ex Willd.) Yalt.	Akçaağaç	P-S
6	**ANACARDIACEAE**		
9	*Pistacia eurycarpa* Yalt.	Bıttım	N-P
10	*Rhus coriaria* L.	Sumak	N-P
7	**APIACEAE**		
11	*Anthriscus nemorosa* (M. Bieb.) Spreng.	Mendo	N-P
12	*Astrodaucus orientalis* (L.) Drude		P
13	*Bunium microcarpum* (Boiss.) Freyn - Bornm.	Yer cevizi	N-P
14	*Chaerophyllum bulbosum* L.	Mendo	N-P
15	*C. crinitum* Boiss.	Mendo	N-P
16	*C. macropodum* Boiss.	Mendo	N-P
17	*Daucus carota* L. CV.	Havuç	N-P
18	*Eryngium billardieri* Delarbre	Hıyarok	N-P

19	*E. bornmuelleri* Nâbelek **END.**	Çölemerik Dikeni	N-P
20	*E. campestre* L. var. *campestre*	Kırsenet	N
21	*E. pyramidale* Boiss. - Hausskn.	Sivri Boğa Dikeni	N-P
22	*E. wanaturi* Woron.	Çayır Boğa Dikeni	N-P
23	*Ferula orientalis* L.	Çakşır	P
24	*Ferulago angulata (*Schltr.) Boiss.	Çakşır	P
25	*F. bernardii* L.	Çakşır	P
26	*F. stellata* Boiss.	Çakşır	P
27	*Grammosciadium cornutum (*Nâbelek) C. C. Towns.		P
28	*G. daucoides* DC.		P
29	*Heracleum crenatifolium* Boiss. **END.**	Tavşanotu	P
30	*Hippomarathrum* microcarpum (M. Bieb.) Fedtsch	Çakşır	P
31	*Malabaila lasiocarpa* Boiss.	Dudakpatlatan	P
32	*Opopanaxw hispidus (*Friv.) Gris	Kaymakotu	P
33	*Pimpinella kotschyana* Boiss.	Yabani anason	N-P
34	*P. peregrina* L.	Yabani anason	N-P
35	*P. tragium* subsp. *lithophila* (Schischk.) Tutin	Yabani anason	N-P
36	*Prangos ferulacea* (L.) Lindl.	Heliz	P
37	*P. pabularia* Lindl.	Heliz	P
38	*P. peucedanifolia* Fenzl	Heliz	P
39	*P. uloptera* DC.	Heliz	P
40	*Scandix iberica* M. Bieb.	Kişkiş	N-P
41	*S. pecten-veneris* L.	Kişkiş	N-P
42	*S. stellata* Banks - Sol.	Kişkiş	N-P
43	*Sium sisarum* L. var. *lancifolium* (M. Bieb.) Theli.	Su kazayağı	N-P
44	*Smyrnium cordifolium* Boiss.	Yabani Kereviz	N-P
45	*Torilis leptophylla* (L.) Rchb.f.	Kokarot	P
46	*Turgenia latifolia* (L.) Hoffm.	Pıtrak	P
47	*Zosima absinthifolia* (Vent.) Link	Peynirotu	P
8	**APOCYNACEAE**		
48	*Trachomitum Woodson venetum (*L.) Woodson subsp. *sarmatiense (*Woodson) Avetisian	Kumotu	N-P
9	ASTERACEAE		
49	*Achillea arabica* Kotschy	Civanperçemi	N-P
50	*A. cappadocica* Hausskn. - Bornm**. END.**	Civanperçemi	N-P
51	*A. millefolium* L.	Civanperçemi	N-P
52	*A. nobilis* L. subsp. *neilreichii* (A. Kern.) Formânek	Civanperçemi	N-P
53	*A. schischkinii* Sosn. **END.**	Civanperçemi	N-P
54	*A. tenuifolia* Lam.	Civanperçemi	N-P
55	*A. vermicularis* Trin.	Civanperçemi	N-P
56	*Acroptilon repens* (L.) DC.	Kekre	N-P
57	*Anthemis altissima* L.	Yabani papatya	N-P
58	*A. austriaca* Jacq.	Papatya	N-P
59	*A. cretica* L.	Yabani papatya	N-P
60	*A. cretica* L. subsp. *albida* (Boiss.) Grierson	Yabani papatya	N-P
61	*A. cretica* L. subsp. *anatolica* (Boiss.) Grierson	Yabani papatya	N-P
62	*Arctium tomentosum* Mili. var. *glabrum* (Körn.) Arenes	Koyunotu	N-P
63	*Artemisia incana* (L.) Druce	Yavşanotu	N-P
64	*Carduus hamulosus* subsp. *hystrix* (C.A.Mey.) Kazmi	Devedikeni	N-P
65	*C. pycnocephalus* subsp. *albidus* (M.Bieb.) Kazmi	Devedikeni	N-P
66	*Carlina oligocephala* Boiss. - Kotschy	Gümüşdiken	N-P
67	*Centaurea carduiformis* DC. subsp. *carduiformis* var. *carduiformis*	Kavgalaz	N-P
68	*Centaurea iberica* Trev. ex Spreng.	Deligözdikeni	N-P
69	*C. karduchorum* Boiss. **END.**	Peygamber çiçeği	N-P
70	*C.nemecii N*âbelek	Deli Kavgalaz	N-P
71	*C. persica* Boiss.	Acem Kavgalazı	N-P
72	*C. polypodiifolia* Boiss.	Akbehmen	N-P
73	*C. szovitsiana* Boiss.	Akbehmen	N-P
74	*C. pseudoscabiosa* Boiss. - Buhse	Yaman Kavgalaz	N-P
75	*C. pseudoscabiosa* Buhse subsp. *araratica* (Azn.) Wagenitz	Yaman Kavgalaz	N-P
76	*C. pterocaula* Trautv.	Çoruşbozan	N-P
77	*C. saligna* (C. Koch) Wagenitz **END.**	Hol	N-P
78	*C. solstitialis* L.	Çakırdikeni	N-P
79	*C. spectabilis* (Fisch. - C. A. Mey.) Sch. Bip. var. *araneosa* (Boiss.)Wagenitz	Turanbaşı	N-P
80	*C. spectabilis* (Fisch. - C.A.Mey.) Sch. Bip.	Turanbaşı	N-P
81	*C. triumfettii* All.	Peygamber çiçeği	N-P
82	*C. urvillei* DC.	Alakötürüm	N-P
83	*C. urvillei* DC. *subsp. nimrodis* (Boiss. - Hausskn.) Wagenitz	Koçkötürüm	N-P
84	*C. virgata* Lam.	Acısüpürge	N-P
85	*Chardinia orientalis* (L.) Kuntze	Dikenotu	P
86	*Chondrilla juncea* L.	Sakızotu	N-P

87	*Cichorium intybus* L.	Hindiba	N-P
88	*Cirsium arvense* (L.) Scop.	Eşekotu	N-P
89	*C. congesteum* Fisch. - C.A.Mey. ex DC.	Eşekotu	N-P
90	*Cirsium echinus* (M. Bieb.) Hand.-Maz.	Eşekotu	N-P
91	*C. elodes* M.Bieb.	Eşekotu	N-P
92	*C. karduchorum* Petr.	Eşekotu	N-P
93	*C. vulgare* (Savi) Ten.	Eşekotu	N-P
94	*Cousinia bicolor* Freyn - Sint. **END.**	Eşekotu	N-P
95	*C. vanensis* Hub.-Mor. **END.**	Eşekotu	N-P
96	*Cnicus benedictus* L. var. *kotschyi* Boiss.	Acıdiken	N-P
97	*Crepis alpina* L.	Kokar hindiba	N-P
98	*C. bupleurifolia* (Boiss.) Freyn - Sint**. END.**	Kokar hindiba	N-P
99	*C. foetida* L. subsp. *rhoeadifolia* (M. Bieb.) Celak.	Kokar hindiba	N-P
100	*C. commutata* (Spreng.) Greuter.	Kokar hindiba	N-P
101	*C. hakkarica* Lamond **END.**	Kokar hindiba	N-P
102	*C. sancta* (L.) Babc.	Kokar hindiba	N-P
103	*Crupina vulgaris* Cass.	Gelin döndüren	N-P
104	*Echinops orientalis* Trautv.	Gökbaş	N-P
105	*E. pungens* Trautv.	Gökbaş	N-P
106	*E. pungens* Trautv. var. *adeııoclados* Hedge **END.**	Gökbaş	N-P
107	*Erigeron acer* L. subsp. *pycnotriclus* (Vierh.) Grierson	Şifaotu	N-P
108	*Filago pyramidata* L.	Külotu	P
109	*Gundelia tournefortii* L. var. *tournefortii*	Kengel	N-P
110	*Helichrysum armeniacum* DC. subsp. *armeniacum*	Altınotu	N-P
111	*H. pallasii* (Spreng.) Ledeb.	Altınotu	N-P
112	*H. plicatum* DC	Altınotu	N-P
113	*H. plicatum* DC. subsp. *polyphyllum* (Ledeb.) P. H. Davis - Kupicha	Altınotu	N-P
114	*Hieracium umbellatum* L.	Fare kulağı	N-P
115	*Inula britannica* L.	Andızotu	N-P
116	*I. helenium* L. subsp. *vanensis* Grierson	Andızotu	N-P
117	*I. montbretiana* DC.	Andızotu	N-P
118	*I. oculus-christi* L.	Andızotu	N-P
119	*I. peacockiana* (Aitch. - Hemsl.) Korovin	Andızotu	N-P
	I. salicina L.	Andızotu	N-P
121	*I. thapsoides* (M. Bieb. ex Willd.) Spreng. subsp. *australis* Grierson	Andızotu	N-P
122	*I. viscidula* Boiss. - Kotschy	Andızotu	N-P
123	*Jurinea cataonica* Boiss. - Hausskn. **END.**	Deve dikeni	N-P
124	*Koelpinia linearis* Pall.	Sarıyaban	N-P
125	*Lactuca saligna* L.	Yabani marul	N-P
126	*L. sativa* L. CV.	Marul	N-P
127	*L. serriola* L.	Yabani marul	N-P
128	*Lapsana communis* L. *subsp. intermedia* (M. Bieb.) Hayek	Memeotu	N-P
129	*Leontodon asperrimus* (Willd.) J. Ball	Sarı yaban	N-P
130	*L. crispus* Vill. subsp. *asper* (Waldst. - Kit.) Rohl. var. *asper*	Sarı yaban	N-P
131	*Logfia arvensis* (L.) Holub	Külotu	P
132	*Onopordum acanthium* L.	Devedikeni	N-P
133	*O. armenum* Grossh.	Devedikeni	N-P
134	*O. candidum* Nâbelek	Devedikeni	N-P
135	*Picnomon acarna* (L.) Cass.	Dikenliot	N-P
136	*Picris strigosa* M. Bieb.	Kikre	N-P
137	*Pilosella piloselloides* subsp. *magyarica* (Peter) S.Bräut. - Greuter	Altıngöz	N-P
138	*P. x fallax* (Willd.) Arv.-Touv.	Altıngöz	N-P
139	*P. verruculata* (Link) Sojâk	Altıngöz	N-P
140	*Pulicaria dysenterica* (L.) Bernh.	Sarıyıldız	N-P
141	*Reichardia glauca* Matthews	Sütlü	N-P – S
142	*Rhagadiolus angulosus* (Jaub. - Spach) Kupicha	Sarıçiçek	N-P
143	*Scorzonera cana* (C.A.Mey.) Hoffm. var. *jacquiniana* (W. Koch) D. F. Chamb.	Yemlik	N-P
144	*S. incisa* DC.	Yemlik	N-P
145	*S. latifolia* (Fisch. - C.A.Mey.) DC. var. *latifolia*	Yemlik	N-P
146	*S. mollis* M. Bieb.	Yemlik	N-P
147	*S. mollis* M. *Bieb. subsp. szowitii* (DC.) D. F. Chamb.	Yemlik	N-P
148	*S. rigida* Aucher	Yemlik	N-P
149	*Scorzonera semicana* DC. **END.**	Yemlik	N-P
150	*S. sııberosa* C. Koch subsp. *suberosa*	Yemlik	N-P
151	*S. veratrifolia* Fenzl	Yemlik	N-P
152	*SeNio cilicius* Boiss. **END.**	Kanaryaotu	N-P
153	*S. eriospermus* DC. var. *eriospermus*	Kanaryaotu	N-P
154	*S. mollis* Willd.	Kanaryaotu	N-P
155	*S. paucilobus* DC.	Kanaryaotu	N-P
156	*S. vernalis* Waldst. - Kit.	Kanaryaotu	N-P

157	*Serratula cerinthifolia* (Sm.) Boiss.	Dikenotu	N-P
158	*S. coriacea* Fisch. - C.A.Mey.ex DC.	Dikenotu	N-P
159	*S. radiata* (Waldst. - Kit.) M. Bieb. subsp. *biebersteiniana* Iljin ex Grossh.	Dikenotu	N-P
160	*Tanacetum argyrophylhım* (C. Koch) Tzvel. var. *subvirescens* (DC.) Grierson	Pireotu	N-P
161	*T. chiliophyllum* (Fisch. - C. A. Mey.) Seli. Bip. var. *chiliophyllıım*	Pireotu	N-P
162	*T. kotschyi* (Boiss.) Grierson	Pireotu	N-P
163	*T. nitens* (Boiss. - Noe) Grierson **END.**	Pireotu	N-P
164	*T. polycephalum* subsp. *argyrophyllum* (K.Koch) Podlech	Pireotu	N-P
165	*T. zahlbruckneri* (Nâbelek) Grierson **END.**	Pireotu	N-P
166	*Tragopogon aureus* Boiss. **END.**	Yemlik	N-P
167	*T. buphthalmoides* (DC.) Boiss. var. *buphthalmoides*	Yemlik	N-P
168	*T. buphthalmoides* (DC.) Boiss. var. *latifolius* Boiss.	Yemlik	N-P
169	*T. pratensis* L.	Yemlik	N-P
170	*T. pterocarpus* DC.	Yemlik	N-P
171	*Taraxacum buttieri van* Soest	Karahindiba	N-P
172	*T. fedtschenkoi* Hand.-Mazz.	Karahindiba	N-P
173	*T. kurdiciforme* G. Hagl.	Karahindiba	N-P
174	*T. montanum* (C.A.Mey.) DC.	Karahindiba	N-P
175	*Tripleurospermum callosum* (Boiss. - Heldr.) E. Hossain **END.**	Yabani papatya	N-P
176	*T. disciforme* (C.A.Mey.) Sch. Bip.	Yabani papatya	N-P
177	*T. microcephalum* (Boiss.) Bornm	Yabani papatya	N-P
178	*Tripleurospermum oreades* (Boiss.) Rech.f. var. oreades	Yabani papatya	N-P
179	*T. transcaucasicıım* (Manden.) Pobed.	Yabani papatya	N-P
180	*Tussilago farfara* L.	Öksürükotu	N-P
181	*Xeranthemum annuum* L.	Dikenli karanfil	P
10	**BORAGINACEAE**		
182	*Alkanna froedinii* Rech. **END.**	Havacıvaotu	N-P
183	*A. orientalis* (L.) Boiss. var. *orientalis*		
184	*Anchusa arvensis* (L.) M. Bieb. subsp. *orinetalis* Nordh.	Mavi Sığırdili	N-P
185	*A. azurea* Mili. var. *azurea*	Mavi Sığırdili	N-P
186	*A. azurea* Mill. var. *macrocarpa* (Boiss. - Hohen.) D. F. Chamb.	Mavi Sığırdili	N-P
187	*A. strigosa* Labill.	Mavi Sığırdili	N-P
188	*Asperugo procumbens* L.	Yatıkot	N-P
189	*Buglossoides arvensis* (L.) Johnston	Sedefotu	N-P
190	*Cerinthe glabra* Mill.	Mumotu	N-P
191	*C. minor* L. subsp. *auriculata* (Ten.) Domac	Mumotu	N-P
192	*Echium italicıım* L.	Engerekotu	N-P
193	*Heliotropium europaeum* L.	Bozot	N-P – S
194	*Heterocaryum szovitsianum* (Fisch. - C.A.Mey.) A. DC.	Örümcekotu	N-P
195	*Myosotis alpestris* F. W. Schmidt	Unutmabeni	N-P
196	*M. lithospermifolia* (Willd.) Hornem.	Unutmabeni	N-P
197	*M. propinqua* Fisch. - C.A.Mey. ex DC.	Unutmabeni	N-P
198	*M. refracta* Boiss.	Unutmabeni	N-P
199	*M. stricta* Link ex Roem. - Schult.	Unutmabeni	N-P
200	*M. sylvatica* Ehrh. ex Hoffm. subsp. *rivıılaris* Vestergren	Unutmabeni	N-P
201	*Nonea anchusoides* Boiss. - Buhse	Kor çiçek	N-P
202	*N. macrantha* (H. Riedl) A. Baytop	Kor çiçek	N-P
203	*N. melanocarpa* Boiss.	Kor çiçek	N-P
204	*N. pulla* (L.) DC. subsp. *scabrisquamata* A. Baytop	Kor çiçek	N-P
205	*Onosma bracteosum* Hausskn. - Bornm. **END.**	Havacıvaotu	N-P
206	*O. lanceolatum* Boiss. - Hausskn.	Havacıvaotu	N-P
207	*O. raschyeanum* Boiss.	Havacıvaotu	N-P
208	*O. tauricum* Pallas ex Willd. subsp. *tauricum*	Havacıvaotu	N-P
209	*Paracaryum cristatıım (*Schreb.) Boiss. subsp. *carduchorıım* R. R. Mili	Mavi salkımotu	N-P
210	*P. cristatıım* (Schreb.) Boiss. subsp. *cristatum* **END.**	Mavi salkımotu	N-P
211	*Rindera albida* (Wettst.) Kusn.	Yünlüot	N-P
212	*R. lanata* (Lam.) Bunge var. *canescens* (A. DC.) Kusn.	Yünlüot	N-P
213	*R. lanata* (Lam.) Bunge var. *lanata*	Yünlüot	N-P
214	*Rochelia cardiosepala* Bunge	Örümcekotu	N-P
215	*R. disperma* (L. f.) C. Koch var. *disperma*	Örümcekotu	N-P
216	*R. disperma* (L. f.) C. Koch var. *microcalycina (*Bornm.) J. R. Edin. **END.**	Örümcekotu	N-P
217	*Solenanthus circinnatıis* Ledeb.	Taçlı çiçek	N-P
218	*S. stamineus* (Desf.) Wettst.	Taçlı çiçek	N-P
11	**BRASSICACEAE**		
219	*Aethionema arabicum* (L.) Andrz. ex DC.	Taş Teresi	P
220	*A. carneum* (Banks - Sol.) B. Fedtsch.	Taş Teresi	P
221	*A. fimbriatum* Boiss.	Taş Teresi	P

222	*A. froedinii* Rech.	Taş Teresi	P
223	*A. grandiftorum* Boiss. - Hohen.	Taş Teresi	P
224	*A. heterocarpıum* J. Gay	Taş Teresi	P
225	*A. membranaceum* DC.	Taş Teresi	P
226	*A. speciosum* Boiss. - Huet subsp. *speciosum*	Taş Teresi	P
227	*A. trinervium* (DC.) Boiss.	Taş Teresi	P
228	*Alyssum desertorum Stapf* var. *desertorum*	Kuduzotu	P
229	*A. filiforme* Nyâr. **END.**	Kuduzotu	P
230	*A. minus* (L.) Rotlım. var. *minus*	Kuduzotu	P
231	*A. murale* Waldst. - Kit. var. *murale*	Kuduzotu	P
232	*A. pateri* Nyâr. subsp. *pateri* **END.**	Kuduzotu	P
233	*A. pateri* Nyâr. subsp. *prostratum* (Nyâr.) Dudley **END.**	Kuduzotu	P
234	*A. stapfii* Vierh.	Kuduzotu	P
235	*A. strigosum* Banks - Sol. subsp. *strigosum*	Kuduzotu	P
236	*A. szowitsianum* Fisch. - C. A. Mey.	Kuduzotu	P
237	*Boreava orientalis* Jaub. - Spach	Sarıot	N-P
238	*Capsella bursa-pastoris* (L.) Medik.	Çoban Çantası	P
239	*Cardamine bulbifera* (L.) Crantz	Yaban Hardalı	N-P
240	*C. ıliginosa* M. Bieb.	Yaban Hardalı	N-P
241	*Cardaria draba* (L.) Desv. *subsp. chalepensis* (L.) O. E. Schulz	Çoban Çantası	P
242	*C. draba* (L.) Desv. subsp. *draba*	Çoban Çantası	P
243	*Conringia orientalis* (L.) Andrz.		P
244	*C. perfoliata* (C. A. Mey.) Busch .		P
245	*C. persica* Boiss.		P
246	*C. planisiliqua* Fisch. - C. A. Mey.		P
247	*Crambe orientalis* L. *var. orientalis*	Hoşkokuluot	N-P
248	*Erysimum goniocaulon* Boiss.	Yaban Şebboy	P
249	*E. sintenisianum* Bornm. Syn: *E. alpestre* Kotschy ex Boiss. **END.**	Yaban Şebboy	P
250	*E. smyrnaeum* Boiss. - Balansa	Yaban Şebboy	P
251	*Isatis aucheri* Boiss. **END.**	Çivitotu	P
252	*I. cappadocica* Desv. subsp. *macrocarpa* (Jaub. - Spach) P. H. Davis	Çivitotu	P
253	*I. cappadocica* Desv. subsp. *subradiata* (Rupr.) P. H. Davis var. *subradiata*	Çivitotu	P
254	*I. cochlearis* Boiss.	Çivitotu	P
255	*I. steveniana* (Trautv.) P. H. Davis Syn*: I. cappadocica* Desv. subsp. *steveniana* (Trautv.) P. H. Davis	Çivitotu	P
256	*Lepidium latifolium* L.	Yaban Teresi	P
257	*L. perfoliatum* L.	Yaban Teresi	P
258	*L. sativum* L. subsp. *sativum*	Yaban Teresi	P
259	*Malcolmia africana* (L.) R. Braga	Malkomya	P
260	*Raphanus raphanistrıum* L.	Yabani Turp	N-P
261	*Sinapis arvensis* L.	Yabani Hardal Otu	N-P
262	*Sisymbrium altissimum* L.	Bülbülotu	P
263	*S. loeselii* L.	Bülbülotu	P
264	*S. orieıtale* L.	Bülbülotu	P
265	*Thlaspi arvense* L.	Çoban Çantası	P
266	*T. kotschyanum* Boiss. - Hohen.	Çoban Çantası	P
267	*T. perfoliatum* L.	Çoban Çantası	P
12	**CAMPANULACEAE**		
268	*Asyneuma pulchellum* (Fisch. - C. A. Mey.) Bornm.	Gökçiçek	N-P
269	*A. rigidium* (Willd.) Grossh. subsp. *rigidium*	Gökçiçek	N-P
270	*A. virgatum* (Labill.) Bornm. subsp. *virgatum*	Gökçiçek	N-P
271	*Campanula conferta* A. DC.	Saklı Çançiçeği	N-P
272	*C. coriacea* P. H. Davis **END.**	Cevaz Çançiçeği	N-P
273	*C. glomerata* L. subsp. *hispida* (Witasek) Hayek	Yumak Çanı	N-P
274	*C. involucrata* Aucher ex A. DC.	Sarım Çanı	N-P
275	*C. rapunculoides L. subsp. cordifolia* (C. Koch) Damboldt	Elmacık	N-P
276	*C. reuterana* Boiss. - Balansa	Sel Çançiçeği	N-P
277	*C. sclerotricha* Boiss.	Dere Çıngırağı	N-P
278	*C. stevenii* M. Bieb. subsp. *beauverdiana* (Fomin) Rech. - Schiman -Czeika.	Benli Çan	N-P
279	*C. stricta* L. var. *stricta*	Gür Çançiçeği	N-P
13	**CAPPARACEAE**		
280	*Cleome iberica* DC.		N-P
14	**CAPRIFOLIACEAE**		
281	*Lonicera caucasica* Pallas subsp. *caucasica*	Hanımeli	N-P
282	*L. nummulariifolia* Jaub - Spach subsp. *nummulariifolia*	Hanımeli	N-P
15	**CARYOPHYLLACEAE**		
283	*Arenaria cucubaloides* Sm.	Süpürgeotu	P
284	*A. gypsophiloides* LMant. var. *gypsophiloides*	Süpürgeotu	P
285	*Cerastium dichotomum* L. subsp. *dichotomum*	Boynuzotu	P

286	*C. kotschyi* Boiss.	Boynuzotu	P
287	*C. perfoliatum* L.	Boynuzotu	P
288	*Dianthus floribundus* Boiss.	Karanfil	N-P
289	*D. hymenolepis* Boiss.	Karanfil	N-P
290	*D. libanotis* Labill.	Karanfil	N-P
291	*D. orientalis* Adams	Karanfil	N-P
292	*D. recognitus* Schischk. **END.**	Karanfil	N-P
293	*D. strictus* Banks - Sol. var. *gracilior* (Boiss.) Reeve	Karanfil	N-P
294	*D. tabrisianus* Bien. ex Boiss.	Karanfil	N-P
295	*Gypsophila bitlisensis* W. F. Barker **END.**	Çöven	P
296	*G. pallida* Stapf	Çöven	P
297	*G. pilosa* Hudson	Çöven	P
298	*G. ruscifolia* Boiss.	Çöven	P
299	*Holosteum umbellatum* L. var. *umbellatum*	Şemsiyeotu	N-P
300	*Minuartia hamata* (Hausskn.) Mattf.	Kayaotu	P
301	*Minuartia juuiperina* (L.) Maire - Petitm.	Kayaotu	P
302	*M.lineata* Bornm.	Kayaotu	P
303	*Petrorhagia cretica* (L.) Ball - Heywood	Narin çiçek	P
304	*Silene aegyptiaca (*L.) L. subsp. *ruderalis* Coode - Cullen	Gıvışganotu	P
305	*S. alba* (Mili.) Krause subsp. *divaricata* (Reichb.) Walters	Gıvışganotu	P
306	*S. ampullaria* Boiss.	Gıvışganotu	P
307	*S. arguta* Fenzl	Gıvışganotu	P
308	*S. capltellata* Boiss. **END.**	Gıvışganotu	P
309	*S. cappadocica* Boiss. - Heldr.	Gıvışganotu	P
310	*S. compacta* Fisch.	Gıvışganotu	P
311	*S. conica* L.	Gıvışganotu	P
312	*S. conoidea* L.	Gıvışganotu	P
313	*S. dichotoma* Ehrh. *subsp. sibthorpiana* (Reichb.) Rech.	Gıvışganotu	P
314	*S. laxa* Boiss. - Kotschy	Gıvışganotu	P
315	*S. marschallii* C. A. Mey.	Gıvışganotu	P
316	*S. noctiflora* L.	Gıvışganotu	P
317	*S. odontopetala* Fenzl	Gıvışganotu	P
318	*S. rhynchocarpa* Boiss.	Gıvışganotu	P
319	*S. sclerophylla* Chowdh. **END.**	Gıvışganotu	P
320	*S. spergulifolia* (Desf.) M. Bieb.	Gıvışganotu	P
321	*S. subconica* Friv.	Gıvışganotu	P
322	*S. vulgaris* (Moench) Garcke var. *commutata* (Guss.) Coode - Cullen	Gıvışganotu	P
323	*S. vulgaris* (Moench) Garcke var. *vulgaris*	Gıvışganotu	P
324	*Stellaria kotsclıyana* Fenzl	Kuşotu	P
325	*S. media (*L.) Vill. subsp. *pallida* (Dumort.) Asch. - Graebn.	Kuşotu	P
326	*Velezia rigida* L.	Nazlı çiçek	P
16	**CISTACEAE**		
327	*Helianthemum ledifolium* (L.) Mili. var. *ledifolium*	Güneş Gülü	N-P
328	*H. ledifolium* (L.) Mili. var. *microcarpum* Willk.	Güneş Gülü	N-P
17	**CONVOLVULACEA**		
329	*Convolvulus arvensis* L.	Sarmaşık	N-P
330	*C. betonicifolia* Mili. subsp. *peduncularis* (Boiss.) Parris	Sarmaşık	N-P
331	*C. culvertii* Boiss.	Sarmaşık	N-P
18	**CORNACEAE**		
332	*Cornus sanguinea* L. *subsp. australis* (C. A. Mey.) Jâv.	Yabani kızılcık	N-P
19	**CRASSULACEAE**		
333	*Prometheum sempervivoides* (Fisch. ex M.Bieb.) H.Ohba Syn: *Sedum sempervivoides* M. Bieb.	Dam Koruğu	N-P
334	*Rosularia sempervivum* (M. Bieb.) A. Berger subsp. *kurdica* Eggli Syn: *R. radiciflora* Boriss. *subsp. kurdica* (Bornm.) Chamb. - Muirhead	Dam Koruğu	N-P
335	*R. sempervivum* (M. Bieb.) subsp. *persica* (Boiss.)Eggli Syn: *R. radiciflora* Boriss. subsp. *radiciflora*	Dam Koruğu	N-P
336	*Sedum album* L.	Dam Koruğu	N-P
20	**CUSCUTACEAE**		
337	*Cuscuta kurdica* Engelmann	Kuskut	Sec
338	*C. monogyna* Vahi subsp. *monogyna*	Kuskut	Sec
21	**DIPSACACEAE**		
339	*Cephalaria hirsuta* Stapf.	Pelemir	N-P
340	*C. microcephala* Boiss.	Pelemir	N-P
341	*C. procera* Fisch. - Lall	Pelemir	N-P
342	*C. setosa* Boiss. - Hohen.	Pelemir	N-P
343	*Pterocephalus kurdicus* Vatke var. *kurdicus*	Fırfırotu	N-P
344	*P. kurdicus* Vatke var. *viscosissimus* Bornm.	Fırfırotu	N-P
345	*P. plumosus* (L.) Coult.	Fırfırotu	N-P
346	*P. szovitsii* Boiss.	Fırfırotu	N-P

347	*Scabiosa argentea* L.	Uyuzotu	N-P
348	*S. bicolor* Kotschy	Uyuzotu	N-P
349	*S. persica* Boiss.	Uyuzotu	N-P
22	**ELAEAGNACEAE**		
350	*Hippophae rhamnoides* L. subsp. *caucasica* Rous.	İğde	N-P
23	**EUPHORBIACEAE**		
351	*Euphorbia chamaesyce* L.	Sütleğen	N-P
352	*E. denticulata* Lam.	Sütleğen	N-P
353	*E. falcata* L. subsp. *falcata* var. *falcata*	Sütleğen	N-P
354	*E. heteradena* Jaub. - Spach	Sütleğen	N-P
355	*E. iberica* Boiss.	Sütleğen	N-P
356	*E. macrocarpa* Boiss. - Buhse	Sütleğen	N-P
357	*E. macroclada* Boiss.	Sütleğen	N-P
358	*E. szovitsii* Fisch. - C. A. Mey. var. *kharputensis* Azn. ex M. S. Klıan	Sütleğen	N-P
359	*E. virgata* Waldst. - Kit.	*Sütleğen*	N-P
24	**FABACEAE (LEGUM INOSAE)**		
360	*Astragalus aduncus* Willd.	Çengel Geven	N-P
361	*A. amblolepis* Fisch.	Küt Geven	N-P
362	*A. asciocalyx* Bunge	Külah Geveni	N-P
363	*A. baytopianus* D. F. Chaırıb. - Matthews END.	Bayrop Geveni	N-P
364	*A. bicolor* Lam.	Damalı Geven	N-P
365	*A. brachycarpus* M. Bieb.	Kınalı Geven	N-P
366	*Astragalus caraganae* Fisch. - C. A. Mey. **END.**	Azer Geveni	N-P
367	*A. cretaceus* Boiss. - Kotschy	Gök Geven	N-P
368	*A. davisii* D. F. Chamb. - Matthews	Erek Geveni	N-P
369	*A. elongatus* Willd. subsp. *elongatus*	Yazıyoncası	N-P
370	*A. fragrans* Willd.	Mis Geven	N-P
371	*A. gummifer* Labill.	Sakızlı Geven	N-P
372	*A. halicacabus* Lam.	Sepet Geveni	N-P
373	*A. kurdicıus* Boiss. var. *muschianus* (Kotschy - Boiss.) Chamb.	Ahır Geveni	N-P
374	*A. macrocephalus* Willd. subsp. *finitimus* (Bunge) Chamb.	Topaç Geven	N-P
375	*A. macrourus* Fisch. - C. A. Mey.	Hargeveni	N-P
376	*A. microcephalus* Willd.	Kara Geven	N-P
377	*A. odoratus* Lam.	Misk Geveni	N-P
378	*A. persicus* (DC.) Fisch. - C. A. Mey.	İran Geveni	N-P
379	*Astragalus pulchellus* Boiss.	Nar Geveni	N-P
380	*A. robustus* Bunge	Koçkuyruğu	N-P
381	*A. subsecundus* Boiss. - Hoh. **END.**	Yamuk Geven	N-P
382	*A. subrobustus* Boriss.	Geven	N-P
383	*A. wartoensis* Boiss.	Geven	N-P
384	*Colutea cilicica* Boiss. - Balansa	Sinameki	N-P
385	*Coronilla orientalis* Mill. var. *orientalis*	Sarı Taç	N-P
386	*C. varia* L. subsp. *varia*	Sarı Taç	N-P
387	*Hedysarum vanense* Hedge - Hub.-Mor. **END.**		N-P
388	*Lathyrus boissieri* Sirj.	Mürdüm	N-P
389	*L. chloranthus* Boiss.	Mürdüm	N-P
390	*L. cicera* L.	Nohut mürdüm	N-P
391	*L. pratensis* L.	Mürdüm	N-P
392	*L. rotundifolius* Willd. subsp. *miniatus* (M. Bieb. ex Stev.) P. H. Davis	Mürdüm	N-P
393	*Lotus corniculatus* L. var. *corniculatus*	Gazal Boynuzu	N-P
394	*Lotus corniculatus* L. var. *tenuifolius* L.	Gazal Boynuzu	N-P
395	*L. gebelia* Vent. var. *gebelia*	Gazal Boynuzu	N-P
396	*Medicago lupulina* L.	Yonca	N-P
397	*M. minima* (L.) Bartal. var. *minima*	Mini Yonca	N-P
398	*M. radiata* L.	Yonca	N-P
399	*M. rigidula* (L.) Ali. var. *rigidula*	Sert Yonca	N-P
400	*M. sativa* L. subsp. *sativa*	Adi Yonca	N-P
401	*Melilotus alba* Desr.	Yonca	N-P
402	*M. officinalis* (L.) Desr.	Sarı Yonca	N-P
403	*Onobrychis altissima* Grossh.		N-P
404	*O. carduchorum* C. C. Towns.	Dağ çöveni	N-P
405	*O. cornuta* (L.) Desv.	Dağ çöveni	N-P
406	*O. radiata* (Desf.) M. Bieb.		N-P
407	*O.sulplıurea* Boiss. - Balansa var. *sulphurea* **END.**	Dağ çöveni	N-P
408	*O. sulphured* Boiss. - Balansa var. *vanensis* Hedge **END.**	Dağ çöveni	N-P
409	*Ononis arvensis* L.	Kayışkıran	N-P
410	*O. spinosa* L. subsp. *leiosperma* (Boiss Siy.	Dikenli Kayışkıran	N-P
411	*Pisum sativum* L. subsp. *elatius* (M. Bieb.) Asoh. - Grâebn. var. *pumilio* Meikle	Bezelye	N-P
412	*Trifolium campesire* Schreb.	Üçgül	N-P
413	*T. longidentatum* Nâbelek **END.**	Üçgül	N-P

414	*T. pratense* L. *var. pratense*	Çayır Üçgülü	N-P
415	*T. repens* L. var. *giganteum* Lag.-Foss.	Aküçgül	N-P
416	*Trigonella brachycarpa* (Fisch.) Moris	Çemen	N-P
417	*T. monantha* C. A. Mey. subsp. *monantha*	Çemen	N-P
418	*T. monantha* C. A. Mey., sııbsp. *noeana* (Boiss.) Hub.-Mor.	Çemen	N-P
419	*T. orthoceras* Kar.-Kir.	Çemen	N-P
420	*T. plicata* (Boiss. - Balansa) Boiss. **END.**	Çemen	N-P
421	*Vicia anatolica* Turrill	Fiğ	N-P
422	*V. cracca* L. subsp. *cracca*	Yabani fiğ	N-P
423	*V. cracca* L. subsp. *stenophylla* Vel.	Yabani fiğ	N-P
424	*V. cracca* L. subsp. *tenuifolia* (Roth) Gaudin	Yabani fiğ	N-P
425	*V. ervilia* (L.) Willd.	Fiğ	N-P
426	*V. sativa* L. subsp. *nigra* (L.) Ehrh. var. *nigra*	Adi fiğ	N-P
427	*V. villosa* Roth subsp. *dasycarpa* (Ten.) Cav.	Tüylü fiğ	N-P
428	*V. villosa* Roth subsp. *villosa*	Tüylü fiğ	N-P
25	**FAGACEAE**		
429	*Quercus infectoria* Olivier subsp. *boissieri* (Reut.) O. Schwarz	Mazı Meşe	P-S
430	*Q. libani* Olivier	Meşe	P-S
431	*Q. petraea* (Mattuschka) Liebl. subsp. *pinnatiloba* (C.Koch) Menitsky **END.**	Meşe	P-S
432	*Q. robur* L. subsp. *pedunculiflora* (C. Koch) Menitsky	Meşe	P-S
26	**FUMARIACEAE**		
433	*Fumaria asepala* Boiss.	Şahtere	P
434	*F. microcarpa* Boiss. ex Hausskn.	Şahtere	P
27	**GENTIANACEAE**		
435	*Centaurium erythraea* Rafıı subsp. *turcicum* (Velen.) Melderis	KaNectaron	N-P
436	*Gentiana cruciata* L.	KaNectaron	N-P
437	*G. olivieri* Griseb.	KaNectaron	N-P
28	**GERANIACEAE**		
438	*Erodium cicutarium* (L.) L'Her. subsp. *cicutarium*	Dönbaba	N-P
439	*Geranium collinum* Steph. ex Willd.	Turnagagası	N-P
440	*G. macrostylum* Boiss.	Turnagagası	N-P
441	*G. rotundifolium* L.	Dönbaba	N-P
442	*G. stepporum* P. H. Davis	Dönbaba	N-P
443	*G. tuberosum L.* subsp. *tuberosum*	Dönbaba	N-P
29	**GLOBULARIACEAE**		
444	*Globularia trichosantha* Fisch. - C. A. Mey. subsp. *trichosantha*	Küreçiçeği	N-P
30	**HYPERICACEAE (GUTTIFERAE)**		
445	*Hypericum elongatum* Ledeb. subsp. *apiculatum* Robson	Binbirdelikotu	P
446	*H.helianthemoides (*Spach) Boiss.	Binbirdelikotu	P
447	*H. lydium* Boiss.	Binbirdelikotu	P
448	*H. lysimachioides* Boiss. - Noe var. *lysimachioides*	Binbirdelikotu	P
449	*Hypericum lysimachioides* Boiss. - Noe var. *spathulatum* Robson	Binbirdelikotu	P
450	*H. perforatum* L.	Binbirdelikotu	P
451	*H. pseudolaeve* Robson **END.**	Binbirdelikotu	P
452	*H. scabrum* L.	Binbirdelikotu	P
31	**ILLECEBRACEAE**		P
453	*Paronychia kurdica* Boiss. subsp. *hausskNhtii Chaudhri* **END.**	Dolama otu	P
454	*P. kurdica* Boiss. subsp. *kurdica* var. *kurdica*	Dolama otu	P
32	**JUGLANDACEAE**		
455	*Juglans regia* L.	Ceviz	P-S
33	**LAMIACEAE (LABIATAE)**		
456	*Acinos rotundifolius* Pers.	Maviot	N-P
457	*Ajuga chamaepitys* subsp. *laevigata* (Boiss.) P.H.Davis	Mayasılotu	N-P
458	*Clinopodium vulgare L.* subsp. *arundanum* (Boiss.) Nyman	Dağ fesleğeni	N-P
459	*Eremostachys moluccelloides* Bunge	Tüylübaba	N-P
460	*Lallemantia iberica* (M. Bieb.) Fisch. - C.A. Mey.	Pelemir	N-P
461	*Lallemantia peltata (*L.) Fisch. - C. A. Mey.	Pelemir	N-P
462	*Lamium amplexicaule* L.	Ballıbaba	N-P
463	*L. garganicum* L. subsp. *reniforme* (Montbret - Aucher ex Bentham) R. Mill.	Ballıbaba	N-P
464	*L. . macrodon* Boiss. - Huet	Ballıbaba	N-P
465	*Marrubium anisodon* C. Koch	İtsineği	N
466	*Mentha longifolia (*L.) Huds. subsp. *typhoides* (Briq.) Harley var. *typhoides*	Reyhan	N-P
467	*Nepeta betonicifolia* C. A. Mey.	Balotu	N-P
468	*N. fissa* G A. Mey.	Balotu	N-P
469	*N. italica* L.	Balotu	N-P

470	*Nepeta nuda* L. subsp. *albiflora* (Boiss.) Gams	Balotu	N-P
471	*N. stenantha* Kotschy - Boiss. ex Boiss.	Balotu	N-P
472	*N. trachonitica* Post.	Balotu	N-P
473	*Origanum vulgare* L. subsp. *gracile* (C. Koch) Ietsw.	Dağkekiği	N-P
474	*O. vulgare* L. subsp. *hirtum(*Link) letsw.	Dağkekiği	N-P
475	*Phlomis armeniaca* Willd. END.	Çayotu	N-P
476	*P. lanceolata* Boiss. - Hohen.	Çayotu	N-P
477	*P. tuberosa* L.	Çayotu	N-P
478	*P. pungens* Willd. var. *pungens*	Çayotu	N-P
479	*P. pungens* Willd. var. *seticalycina* (Nâbe1ek) Hub.-Mor.	Çayotu	N-P
480	*Prunella vulgaris* L.	Yaraotu	N-P
481	*Salvia atropatana* Bunge	Çayır Şalbası	N-P
482	*S. candidissima* J. Vahl subsp. *candidissima*	Galabor	N-P
483	*S. limbata* C. A. Mey.	Galabor	N-P
484	*S. macrochlamys* Boiss. - Kotschy	Gevrek Şalba	N-P
485	*S. microstegia* Boiss. - Balansa	Yağlambaç	N-P
486	*S. multicaulis* J. Vahl.	Adaçayı	N-P
487	*S. nemorosa* L.	Gehareş	N-P
488	*S. poculata* Nâbelek	Küllü Şalba	N-P
489	*S. sclarea* L.	Paskulak	N-P
490	*S. trichoclada* Bentham	Meşe Şalbası	N-P
491	*S. verticillata* L. subsp. *amasiaca* (Freyn - Bornm.) Bornm.	Hart Şalbası	N-P
492	*S.verticillata* L. subsp. *verticillata*	Dadırak	N-P
493	*S. virgata* Jacq.	Fatmanaotu	N-P
494	*Stachys annua* (L.) L. subsp. *annua* var. *lycaonica* Bhattaeharjee	Çayotu	N-P
495	*S. ballotiformis* Vatke	Çayotu	N-P
496	*S. iberica* M. Bieb. subsp. *iberica* var. *densipilosa* Bhattacharjee **END.**	Çayotu	N-P
497	*S. iberica* M. Bieb. subsp. *stenostachya* (Boiss.) Rech.	Çayotu	N-P
498	*S. lavandulifolia* J. Vahi var. *glabrescens* Bhattaeharjee - Hub.-Mor.	Çayotu	N-P
499	*S. lavandulifolia* J. Vahl var. *lavandulifolia*	Çayotu	N-P
500	*S. melampyroides* Hand.-Mazz.	Çayotu	N-P
501	*S. satureoides* Montbret -Aucher ex Bentham	Çayotu	N-P
502	*Scutellaria albida* L. subsp. *condensata* (Rech. Fil.) Edmondson	Doğulu kaside	N-P
503	*S. orientalis* L. subsp. *bornmuelleri* (Hausskn. ex Bornm.) J. R. Edm.	Doğulu kaside	N-P
504	*Scutellaria orientalis* L. subsp. *virens* (Boiss. - Kotschy) J. R. Edm.	Doğulu kaside	N-P
505	*Teucrium chamaedrys* L. subsp. *chamaedrys*	Yavşanotu	N-P
506	*T. chamaedrys* L. subsp. *sinuatum* (Celak.) Rech.	Yavşanotu	N-P
507	*T. chamaedrys* L. subsp. *syspirense* (C. Koch) Rech.	Yavşanotu	N-P
508	*T. parviflorum* Schreb.	Yavşanotu	N-P
509	*T. polium* L.	Yavşanotu	N-P
510	*Thymus fedtschenkoi* Ronniger var. *handelii* (Ronniger) Jalas **END.**	Kekik	N
511	*T. kotschyanus* Boiss. - Hohen. var. *erioplıorus* (Ronniger) Jalas	Kekik	N
512	*T. kotschyanus* Boiss. - Hohen. var. *glabrescens* Boiss.	Kekik	N
513	*T. kotschyanus* Boiss. - Hohen. var. *kotschyanus*	Kekik	N
514	*T. migricus* Klokov - Des.-Shost.	Kekik	N
515	*Ziziphora capitata* L.	Kekik	N
516	*Z. clinopodioides* Lam.	Kekik	N
517	*Z. persica* Bunge	Kekik	N
34	*LINACEAE*		
518	*Linum densiflorum* P. H. Davis	Yabani keten	P
519	*L. mucrotanum* Bertol. subsp. *armenum* (Bordz.) P. H. Davis	Yabani keten	P
520	*L. mucrotanum* Bertol. subsp. *orientales (*Boiss.) P. H. Davis	Yabani keten	P
35	**LYTHRACEAE**		
521	*Lytrum anatolicum* Leblebici - Seçmen **END.**	Kançiçeği	N-P
522	*L. salicaria* L.	Kançiçeği	N-P
36	**MALVACEAE**		
523	*Alcea hohenackeri* (Boiss. - Huet) Boiss.	Hatmi	N-P
524	*Malva neglecta* Wallr.	Ebegümeci	N-P
37	**MORACEAE**		
525	*Ficus carica* L. subsp. *rupestris* (Hausskn.) Browicz	Yaban inciri	P
38	**OLEACEAE**		
526	*Fraxinus angustifolia* J. Vahi subsp. *angustifolia*	Dışbudak	P – S
39	**ONAGRACEAE**		

527	*Epilobium roseum* Schreb. subsp. *subsessile* (Boiss.) P.H. Raven	Mızrakotu	N-P
40	**OROBANCHACEAE**		
528	*Orobanche aegyptiaca* Pers.	Canavarotu	N-P
529	*O. anatolica* Boiss. - Reut.	Canavarotu	N-P
530	*O. arenaria* Borkh.	Canavarotu	N-P
531	*O. crenata* Forssk.	Canavarotu	N-P
532	*O. kurdica* Boiss. - Hausskn.	Canavarotu	N-P
533	*O. lutea* Baumg.	Canavarotu	N-P
534	*O. sclıultzii* Mutel	Canavarotu	N-P
535	*Phelypea coccinea* (M. Bieb.) Poir.	Kızıl	N-P
41	**PLANTAGINACEAE**		
536	*Plantago atrata* Hoppe	Damarotu	P
537	*P. lanceolata* L.	Damarotu	P
538	*P. major* L. subsp. *major*	Damarotu	P
539	*Veronica anagallis-aquatica* L. subsp. *anagalis - aquatica*	Sugedemesi	N-P
540	*V. anagallis-aquatica* L. subsp. *michauxii* (Lam.) Elenevsky	Sugedemesi	N-P
541	*V. arguteserrata* Regel - Schmalh.	Kır Mavişi	N-P
542	*V. bozakmanii* M. A. Fisch.	Bazokman Mavişi	N-P
543	*Veronica orientalis* Mill. subsp. *carduchorum* P. H. Davis ex M. A. Fisch. END.	Çölemerik Mavişi	N-P
544	*V. orientalis* MilL. subsp. *orientalis*	Gözmumcuğu	N-P
545	*V. persica* Poir.	Cırcamok	N-P
546	*V. polita* Fr.	Mavişot	N-P
42	**PLUMBAGINACEAE**		
547	*Acantholimon acerosum* (Willd.) Boiss. var. *acerosum*	Çobanyastığı	P
548	*A. bracteatum* (Girard) Boiss. var. *capitatum* (Sosn.) Bokhari. **END.**	Çobanyastığı	P
549	*A.caryophyllaceum* Boiss, subsp. *caryophyllaceum*	Çobanyastığı	P
43	**PRIMULACEAE**		
550	*Anagallis arvensis* L. var. *caerulea* (L.) Gouan	Kırmızı kulak	N-P
551	*Androsace maxima* L.	Çuha	N-P
552	*Lysimachia vulgaris* L.	Kuyrukotu	N-P
44	**POLYGALACEAE**		
553	*Polygala anatolica Boiss.* - Heldr.	Sütotu	P
45	**POLYGONACEAE**		P
554	*Atraphaxis billardieri* Jaub. - Spach var. *billardieri*	Teke dikeni	P
555	*A. spinosa* L.	Teke dikeni	P
556	*Chenopodium album* L. subsp. *album* var. *albüm*		P
557	*C. botrys* L.	Kokulu kazayağı	P
558	*C. foliosum* (Moench) Asch.		P
559	*Noaea mucronata* (Forssk.) Asch. - Schweinf. subsp. *tournefortii* (Spach) Aellen	Dikenliot	P
560	*Polygonum arenastrum* Bor.	Kuşyemi	N-P
561	*P. bellardii* Ali.	Kuşyemi	N-P
562	*P. cognatum* Meisn.	Madımak	N-P
563	*P. polycnemoides* Jaub. - Spach	Kuşyemi	N-P
564	*P. rottboellioides* Jaub. - Spach	Kuşyemi	N-P
565	*Rheum ribes* L.	Uçkun	P
566	*Rumex caucusicus* Rech.	Kuzukulağı	N-P
567	*R. scutatus* L.	Kuzukulağı	N-P
568	*R. tuberosus* L. subsp. *lıorizontalis* (Koch) Rech.	Kuzukulağı	N-P
46	**RANUNCULACEAE**		
569	*Adonis aestivalis* L. subsp. *aestivalis*	Kandamlası	P
570	*Adonis aestivalis* L. subsp. *parviflora* (Fisch. ex DC.) Busch	Kandamlası	P
571	*Ceratocephalus falcatus* (L.) Pers.	Düğün Çiçeği	P
572	*C. testiculatus* (Crantz) Roth	Düğün Çiçeği	P
573	*Clematis orientalis* L.		P
574	*Consolida oliveriana* (DC.) Schröd.	Hazeran	P
575	*C. scleroclada* (Boiss.) Schröd. var. *rigida* (Freyn - Sint.) P. H. Davis	Hazeran	P
576	*Corydalis integra* Barbey - Fors.-Major	Mahmuz Çiçeği	P
577	*C. oppositifolia* DC. subsp. *oppositifolia* Syn: *C. rutifolia* (Sm.) DC. subsp. *erdelii* (Zucc.) Cullen - P. H. Davis END.	Mahmuz Çiçeği	P
578	*Delphinium carduchorum* Chowdhuri - P. H. Davis END.	Hazeran	P
579	*D.cyphoplectrum* Boiss. var. *vanense* (Rech. f.) P. H. Davis **END.**	Hazeran	P
580	*D. macrostachyum* Boiss. ex Huth	Hazeran	P
581	*Nigella latisecta* P. H. Davis	Çörekotu	N-P

582	*N. oxypetala* Boiss.	Çörekotu	N-P
583	*Papaver arenarium* M. Bieb.	Gelincik	P
584	*P. dubium* L.	Gelincik	P
585	*P. fugax* Poir. var *fugax*	Gelincik	P
586	*P. macrostomum* Boiss. - Huet ex Boiss.	Gelincik	P
587	*P. persicum* Lindl. subsp. *persicum*	Gelincik	P
588	*Ranunculus argyreus* Boiss.	Düğün Çiçeği	P
589	*R. arvensis* L.	Düğün Çiçeği	P
590	*R. aucheri* Boiss.	Düğün Çiçeği	P
591	*R. bulbilliferus* Boiss. et Hoh.	Düğün Çiçeği	P
592	*R. damascenus* Boiss. - Gaill.	Düğün Çiçeği	P
593	*R. kochii* Ledeb.	Düğün Çiçeği	P
594	*R. kotschyi* Boiss.	Düğün Çiçeği	P
595	*R. munzurensis* Erik - Yild. **END.**	Düğün Çiçeği	P
596	*R. polyanthemos* L.	Düğün Çiçeği	P
597	*Roemeria hybrida* (L.) DC. subsp. *hybrida*	Mor Gelin	P
598	*R. refracta* DC. subsp. *occidentalis* Kadereit	Mor Gelin	P
47	**RESEDACEAE**		
599	*Reseda lutea* L. var. *lutea*	Lapaza	N-P
48	**RHAMNACEAE**		
600	*Frangula alnus* Mili. subsp. *pontica* (Boiss.) Davis - Yalt. END.	Barut ağacı	N-P
601	*Paliurus spina-christi* Mili.	Karadiken	N-P
602	*Rhamnus kurdicus* Boiss. - Hohen.	Cehri	N-P
603	*R. orbiculatus* Bornm.	Cehri	N-P
49	**ROSACEAE**		
604	*Agrimonia eupatoria* L.		N-P
605	*Alchemilla persica* Rothm.	Aslanpençesi	N-P
606	*Amygdalus communis* L.	Badem	N-P
607	*A.trichamygdalıs* (Hand.-Mazz.) Woronow var. *trichamygdalus*	Badem	N-P
608	*Armeniaca vulgaris* Lam. CV.	Kayısı	N-P
609	*Cerasus brachypetala* Boiss. var. *bornmuelleri* (Schneider) Brovvicz	Yabani Kiraz	N-P
610	*C. mahaleb* (L.) Mili. var. *alpina* Browicz END.	Yabani Mahlep	N-P
611	*C. mahaleb* (L.) Mili. var. *mahaleb*	Yabani Mahlep	N-P
612	*C. microcarpa* (C. A. Mey.) Boiss. subsp. *tortuosa* (Boiss. - Hausskn.)Browicz	Yabani Kiraz	N-P
613	*Cotoneaster nummularia* Fisch. - C. A. Mey.	Dağmuşmulası	N-P
614	*Crataegus monogyna* Jacq. subsp. *monogyna*	Alıç	N-P
615	*C.pseudoheterophylla* Pojark.	Alıç	N-P
616	*Geum urbanum* L.		N-P
617	*Malus sylvestris* Mili. subsp. *mitis* (Wallr.) Mansf. CV.	Elma	N-P
618	*Potentilla anatolica* Peşmen **END.**	Kazotu	N-P
619	*P. bifurca* L.	Kazotu	N-P
620	*P. inclinata* Vill.	Kazotu	N-P
621	*P. lignosa* Willd.	Kazotu	N-P
622	*P. recta* L.	Kazotu	N-P
623	*P. reptans* L.	Kazotu	N-P
624	*Pyrus syriaca* Boiss. var. *syriaca*	Yabani Armut	N-P
625	*Rosa canina* L.	Yabangülü	N-P
626	*R. pulverulenta* M. Bieb.	Yabangülü	N-P
627	*Rubus sanctus* Schreb.	Böğürtlen	N-P
628	*R. saxatilis* L.	Böğürtlen	N-P
629	*Sanguisorba minor* Scop, subsp. *lasiocarpa* (Boiss. - Mniisskn.) Nordbrog		N-P
630	*S. minor* Scop, subsp. *minor*		N-P
631	*S. minor* Scop, subsp. *muricata* (Spach) Briq.		N-P
632	*Sorbus kusnetzovii* Zinserl.	Üvez	N-P
50	**RUBIACEAE**		
633	*Galium consanguineum* Boiss.	Yoğurtotu	N
634	*G. humifusum M.* Bieb.	Yoğurtotu	N
635	*G. incanum* Sm. subsp. *elatius* (Boiss.) Ehrend.	Yoğurtotu	N
636	*G. spurium* L. subsp. *spurium*	Yoğurtotu	N
637	*G. uliginosum* L.	Yoğurtotu	N
638	*G. verum* L. subsp. *verum*	Yoğurtotu	N
51	**RUTACEAE**		
639	*Haplophyllum buxbaumii* (Poir.) G. Don subsp. *buxbaumii*	Sarıbaş otu	P
52	**SALICACEAE**		
640	*Populus tremula* L. CV.	Titrek kavak	Sec
641	*Salix alba* L.	Dere söğüdü	N-P-S
642	*S. babylonica* L. CV.	Keçisöğüdü	N-P-S
643	*S. caprea* L.	Keçisöğüdü	N-P-S
53	**SANTALACEAE**		

644	*Thesium billardieri* Boiss.	Akçalı	N
54	**SCROPHULARIACEAE**		
645	*Bungea trifida* (Vahl.) C. A. Mey.	Tüylüot	N-P
646	*Euphrasia pectinata* Ten.	Gözotu	N-P
647	*Linaria chalepensis* (L.) Mili. var. *chalepensis*	Nevruzotu	N-P
648	*L. kurdica* Boiss. - Hohen. subsp. *araratica* (Tzvel.) P. H. Davis	Nevruzotu	N-P
649	*L. kurdica* Boiss. - Hohen. subsp. *pycnoplıylla* (Boiss. - Balansa) P. H.Davis	Nevruzotu	N-P
650	*L. simplex* (Willd.) DC.	Nevruzotu	N-P
651	*Odontites aucheri* Boiss.	Odontis	N-P
652	*O. verna* (Bellardi) *Dumort*. subsp. *serotina* (Dumort.) Corb.		
653	*Pedicularis comosa* L. var. *sibthorpii (*Boiss.) Boiss.	Sarı bitotu	P
654	*Rhinanthus angustifolius* C. C. Gmel. subsp. *grandiflorus* (Wal.) D. A. Webb.	Sarı bitotu	P
655	*Rhynchocorys kurdica* Nâbelek **END.**	Filburnu	N-P
656	*Scrophularia ilwensis* C. Koch	Sıracaotu	N-P
657	S. *libanotica* Boiss. var. *urartuensis* R. R. Mili END.	Sıracaotu	N-P
658	*S. striata* Boiss.	Sıracaotu	N-P
659	*Verbascum agrimoniifolium* (C. Koch) Hub.-Mor. subsp. *agrimoniifolium*	Sığırkuyruğu	N-P
660	*V.cheiranthifolium* Boiss. var. *cheiranthifolium*	Sığırkuyruğu	N-P
661	*V. kurdicum* Hub.-Mor. **END.**	Sığırkuyruğu	N-P
662	*V. macrocarpum* Boiss.	Sığırkuyruğu	N-P
663	*V. oreophilum* C. Koch var. *joannis* (Bardz.) Hub.-Mor.	Sığırkuyruğu	N-P
664	*V. phoeniceum* L.	Sığırkuyruğu	N-P
55	**TAMARICACEAE**		
665	*Tamarix smyrnensis* Bunge	Ilgın	N-P-S
56	**THYMELAEACEAE**		
666	*Daphne oleoides* Schreb. subsp. *kurdica* (Bornm.) Bornm.	Defne	P
667	*D. mucronata* Royle	Defne	P
668	*Thymelaea mesopotamica* (Jeffrey) Peterson	Sarıçalı	N-P
669	*T. passerina* (L.) Coss. - Germ.	Sarıçalı	N-P
57	**ULMACEAE**		
670	*Celtis glabrata* Steven ex Panch.	Çitlenbik	N-P
671	*Ulmus minor* Mill. subsp. *minor*	Karaağaç	P-S
58	**URTICACEAE**		
672	*Urtica dioica* L.	Isırgan	P
59	**VALERIANACEAE**		
673	*Centranthus longiflorus* Stev. subsp. *longiflorus*	Mahmuz çiçeği	N-P
674	*Valeriana alliariifolia* Adams	Kediotu	N-P
675	*V. dioscoridis* Sm.	Kediotu	N-P
676	*V. leucophaea* DC.	Kediotu	N-P
677	*V. sisymbriifolia* Vahl	Kediotu	N-P
678	*Valerianella coronata* (L.) DC.	Pıltan	N-P
679	*V. cymbicarpa* C. A. Mey.	Pıltan	N-P
680	*V. dactylophylla* Boiss. - Hohen.	Pıltan	N-P
60	**VERBENACEAE**		
681	*Verbena officinalis* L.	Demirotu	P
61	**VIOLACEAE**		
682	*Viola odorata* L.	Orman menekşesi	N-P
683	*V. jordanii* Hanry	Orman menekşesi	N-P
684	*V. kitaibeliana* Roem. - Schult.	Orman menekşesi	N-P
685	*V. occulta* Lehm.	Orman menekşesi	N-P
62	**VITACEAE**		
686	*Vitis vinifera* L. CV.	Üzüm	N-P
63	*ZYGOPHYLLACEAE*		
687	*Tribulus terrestris* L.	Çoban otu	P
688	**MONOCOTYLEDONEAE**		
64	**AMARYLLIDACEAE**		
689	*A. akaka* S.G. Gmel.	Kuzukulağı soğan	N-P
690	*A. atroviolaceıım* Boiss.	Sirmo	N-P
691	*A. chrysantherum* Boiss. - Reut.	Yabani soğan	N-P
692	*A. flavum* L. subsp. *tauricıım* (Beser ex Reichb.) Stearn var. *taıiricum*	Sarı soğan	N-P
693	*A. fuscoviolaceum* Fomin	Yabani soğan	N-P
694	*A. guttatum* Steven	Yabani soğan	N-P
695	*A. pseudoampeloprasıım* Miscz. ex Grossh.	Yabani soğan	N-P
696	*A. pseıidoflavıım* Vved.	Yabani soğan	N-P
697	*A. rotundum* L.	Sirim	N-P
698	*A. shatakiense* Rech. **END.**	Yabani soğan	N-P
699	*A. stearnianum* subsp. *vanense* Kollmann - Koyuncu	Sirim	N-P

	END.		
700	*A. tchihatschewii* Boiss. **END.**	Yabani soğan	N-P
701	*A. vineale* L.	Yabani soğan	N-P
702	*Ixiolirion tataricum* (Pall.) Schult. - Schult.f.	Tatarcık	N-P
65	**ARACEAE**		
703	*Arum rupicola* Boiss.	Yılan yastığı	P
66	**ASPARAGACEAE**		
704	*Bellevalia fominii* Woronow	Yayla sümbülü	N-P
705	*B. longistyla (*Miscz.) Grossh.	Yayla sümbülü	N-P
706	*B. pycnantlıa* (C. Koch) A. Los.-Los.	Yayla sümbülü	N-P
707	*Muscari armeniacum* Leichtlin ex Baker	Arapsümbülü	N-P
708	*M. comosum* (L.) Mili.	Arapsümbülü	N-P
709	*M. longipes* Boiss.	Arapsümbülü	N-P
710	*M. neglectum* Guss. ex Ten.	Arapsümbülü	N-P
711	*M. tenuiflorum* Tausch	Arapsümbülü	N-P
67	**COLCHICACEAE**		
712	*Colchicum kotschyi* Boiss.	Acı çiğdem	N-P
713	*C. szovitsii* Fisch. - C.A.Mey.	Acı çiğdem	N-P
68	**IRIDACEAE**		
714	*Gladiolus atroviolaceus* Boiss.	Glayöl	P
715	*Iris caucasica* Hoffm.	Nevruz	N-P
716	*I. sari* Schott ex Baker **END.**	Süsen	N-P
69	**LILIACEAE**		
717	*Eremurus spectabilis* M. Bieb.	Çiriş	N-P
718	*Fritillaria kurdica* Boiss. - Noë	Ters lale	P
719	*F. minima* Rix	Ters lale	P
720	*F. minuta* Boiss. - Noe	Ters lale	P
721	*F. pinardii* Boiss.	Ters lale	P
722	*Gagea bıılbifera* (Pall.) Salisb.	Sarı çiğdem	N-P
723	*G. confusa* A.Terracc.	Sarı çiğdem	N-P
724	*G. gageoides* (Zucc.) Vved.	Sarı çiğdem	N-P
725	*G. glacialis* K.Koch	Sarı çiğdem	N-P
726	*G. uliginosa* Siehe - Pascher	Sarı çiğdem	N-P
727	*G.villosa* (M.Bieb.) Sweet	Sarı çiğdem	N-P
728	*Ornithogalum narbonense* L.	Tükrükotu	P
729	*O. oligophyllum* E.D.Clarke	Tükrükotu	P
730	*Puschkinia scilloides* Adams	Karsümbülü	N-P
731	*Tulipa humilis* Herb.	Çoban lalesi	N-P
732	*T. julia* C. Koch	Yabani lale	N-P
70	*ORCHIDACEAE*		
733	*Dactylorhiza umbrosa* (Kar.- Kir.) Nevski	Salepotu	N-P
734	*Epipactis palustris* (L.) Crantz	Danakıran otu	N-P
735	*E. veratrifolia* Boiss. - Hohen	Danakıran otu	N-P
736	*Orchis coriophora* L.	Orkide	N-P
737	*O. mascula* (L.) L.	Orkide	N-P
738	*O. palustris* Jacq.	Orkide	N-P
71	*POACEAE*		
739	*Cynodon dactylon* (L.) Pers.	Ayrıkotu	P
740	*Hordeum bulbosum* L.	Arpa	P

DISCUSSION and CONCLUSION

There are studies on this issue in our country; (Zengin, 1998). He examined the plants visited by the honey bee in the Erzurum region. As a result of his studies, honey bees were visited 105 plant species belonging to 25 families during the pollination period.

Öztürk and Erkan, in the Van Lake Basin, between the years of 1993-2003, honey bees 251 natural, 31 culture has stated that the totally 282 taxa uses (Öztürk and Erkan, 2010).

Aydın and Çine-Karpuzlu district in Aydın surveys, visited by honeybees, pollen and Nectar plants collected from 23 subfamilies 91 plant species have determined.

The work done to recognize the Nectar and pollen plants in Aydın region and the observations carried out in the region by taking into consideration the work done by the 73 families 595 plant species by bees is used. In addition, between the years of 2003-2008, the diagnosis of these plants and the Latin and Turkish names of these plants, cultivation areas, active flowering times, such as used in the criteria (Karaca, 2008).

As a result, in this study conducted in Botan valley of Çatak district of Van, 733 natural taxon bee plants and 7 cultivation

species belonging to 71 families were determined totally 740 taxa. 64 taxa of these plants are endemic.

Wealth of floristic structure, abundancy of bee plants and endemic plants only growing in this valley in the world have been revealed by this study carried out in Botan valley. It has been determined that study area has very rich floristic structure in respect of apiculture. For this reason, quality of honey has a very distinct taste as honey is gathered from this area. When we only consider that Basin of Lake Van has 282 bee plant species, it is clearly understood how much this area is rich in terms of floristic wealth.

REFERENCES

Akman, Y. 1993. Biyocoğrafya. Palme Yayınları, 37-40, Ankara.

Ahmad, K.J., Razzaq, A., Abbasi, K.H., Shafiq, M., Saleem, M., Arshadullah, M. 2013. Thymol as control agent of mites (*Varroa destructor*) on honeybees (Apis mellifera). Pak. J. Agri. Res., 26(4): 316-320.

Altan, Y., Uğurlu, E. 2000. Contribution to the flora of Cavuştepe (Van, Turkey). Bulletin of Pure-Applied Sciences, 19B:(2): 117-128.

Altan, Y., Behçet, L. 1995. Hizan (Bitlis) Florası. Doğa Tr. J. of Botany, 19(1): 331-344.

Anonymous, 2004. Flora di Interese Apistico, www.picultura2000.it/flora.htm #u.

Anonymous, 2004. Some important asian bee forage plants. www.fao.org.

Anonymous, 2017. Food and agriculture organisation of the united nation. statistical databases, Agriculture, Roma, Italia, www.fao.org.

Anşin, R., 1993. Tohumlu bitkiler (Spermatophyta), odunsu taksonlar. K.T.Ü., Orman Fak. Yay., 19: 93-96.

Baytop, T. 1994. Türkiye bitki adları sözlüğü. Ata. Kült. Dil ve Tar. Yük. Kurulu, Yay. No, 578.

Behçet, L. 1991. Süphan dağı (Bitlis) florası. YYÜ Fen Bil. Ens. D., 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 Üniv. Sreies B, 15(1): 43-54.

Beyazoğlu, O. 1986. Nektar (balözü). Türkiye Doğa Biyoloji Derg., 10(3):265.

Blazyte-Cereskiene, L., Vaitkeviciene, G., Venskutonyte, S., Buda, V. 2010. Honey bee foraging in spring oilseed rape crops under high ambient temperature conditions. Zemdirbyste-Agriculture, 97: 61–70.

Boynukara, Z., Öztürk, A. 1992. Artos (Çadır) Dağı (Van) Florası. YYÜ Fen Bil. Enst. Dergisi, 1(2): 68-69.

Davıs, P.H. 1965. The Identification of Flowering Plant Families. Edinburgh Univ. Press., Edinburgh.

Coşkun, P., Inci, H. 2020. Propolisin kimyasal içeriği ile antibakteriyel, antiviral ve antioksidan aktivitesi. ISPEC Journal of Agricultural Sciences, 4(4): 1053-1070.

Davıs, P.H. 1965-1985. Flora of Turkey and the East Aegean Islands, Vol. 1-9, Univ. Press., Edinburgh.

Davıs, P.H. 1988. Flora of Turkey and the East Aegean Islands, Vol.10 (supplement). Univ. Press., Edinburgh.

Demirkuş, N., Koyuncu, M., Gül, M. 2001, The endemik plants of van province. Proceedings of the 2nd Balkan Botanical Congress, s. 163-169 , İstanbul.

Edwards, P. 2003. List of Bee Plants. www.stratford-upon-avon.treeserve.co.uk.

Ekim, T. 1987. Arıcılıkta önem taşıyan bitkiler ve bunların yurdumuzdaki durumu. Türkiye I. Arıcılık Kongresi Kitapçığı, 53-64, 22-24 Ocak, Ankara.

Ekim, T. 1990. Türkiye'nin biyolojik zenginlikleri, türkiye çevre sorunları Vakfı Yayını. Ankara.

Ekim, T. 1997. Ülkemizdeki floristik çalışmaların kronolojisi ve son gelişmeler, Taksonomi Yaz Okulu Ders Notları. Antalya.

Ekim, T. 2000. Türkiye bitkileri kırmızı kitabı. Türkiye Tabiatını Koruma Derneği, Yayın no:18, Ankara.

Emberger, L. 1955. Une classification biogeographique des climats, Rec. Trav. Lab. Bot. Fac. Sc. Montpellieri, 7: 3-43.

Erinç, S. 1965. Doğu Anadolu Coğrafyası, İstanbul ÜnIv. Yay., No 572.

Fırat, M., Demirkuş, N. 2002. Bahçesaray (Van) ve çevresi florası üzerine bir araştırma.Yüksek Lisans Tezi, Yüzüncü Yıl Üniv. Fen Bil. Enst.

Gürel, F. 2001. Bombus arısının örtü altı yetiştiricilikte ve ekolojik tarımda kullanımı. II. Türkiye Ekolojik Tar. Semp. 14-16 Kasım, Antalya.

Güner, A., Özhatay, N., Ekim, T., Başer, K H.C. 2000. Flora of Turkey, UniversIty Press, Vol. 11, (Suplement II), Edinburgh.

James, E.T. 1998. Some ohio nectar and pollen producing plants. Ohio State Univ. Extension Fact Sheet. HYG-2168-98, Ohio, USA.

Ilarslan, R. 2000. Türkiye'de *Thymus* L. (Lamiaceae) taksonlarının yayılış alanları. S.,Ü., Fen Ed. Fak., Fen Derg., 17: 165-186.

Karabacak, O., Koyuncu, M. 2002. Akçadağ (Erciş-Van) florası. Yüksek Lisans Tezi, Yüzüncü Yıl Üniv. Fen Bil. Enst.

Karaca, A. 2008. Aydın yöresinde bal arılarının (*Apis mellifera* L.) yararlanabileceği bitkiler ve bazı özellikleri. ADÜ Ziraat Fakültesi Dergisi, 5(2): 39-66.

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.

Kumova, U., Korkmaz, A. 2001. Arı yetiştiriciliği. TÜBİTAK, TARP Yayınları.

Mc. Groger, S.E. 1976. California pollination of cultivatet crop plants. ARS, USDA, Agriculture Handbook, No:496, Washington.

Özbek, H. 1979. Kültür bitkilerinin tozlaşmalarında bal arısı (*Apis mellifera* L.) Atatürk Üniv. Zir. Fak. Derg. 10: 1-2.

Öğün, E., Altan, Y. 1992. Toprakkale (Van) florası. YYÜ Fen Bil. Ens. D., 1, 2, 201-211, Van.

Özçelik, H. 1987. Erek dağı (Van) florası üzerine bir araştırma. Yüksek Lisans Tezi, Yüzüncü Yıl Üniv. Fen Bil. Enst.

Özgökçe, F., Behçet, L. 1999. Özalp (Van)'ın flora ve vejetesyonu. Yüksek Lisans Tezi, Yüzüncü Yıl Üniv. Fen Bil. Enst.

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.

Öztürk, F. 1998. Y.Y.Ü. Zeve Kampüsü (Van/Turkey) florası üzerine bir araştırma. XIV. Ulusal Biyoloji Kong., 7-10 Eylül, Samsun.

Öztürk, F., Behçet, L. 1999. Kurubaş geçidi (Van) florası. Ot Sist. Bot. Derg., 6(1): 39-56.

Öztürk, F., 2002. Taxonomical List of Woody Plants in Van Lake Basin. VI. Plant Life SW. Asia Symposium, 10-14 June, Van, Turkey.

Öztürk, F. 2004. Doğu Anadolu Bölgesine floristik katkılar. Selçuk Üniv. Fen Bil. Derg., 22: 7-17.

Öztürk, F., Erkan, C. 2010. Bee Plants of Van Lake Basin (Türkiye). International Journal of Botany, 6(2):101-106.

Peşmen, H.A. 1973. A Study on the Flora of Nemrut Dağı (Bitlis), İst. Üniv. Orman Fak. Derg. 209: 271-287.

Qayyoum, M.A., Khan B.S., Bashir, M.H. 2013. Efficacy of plant extracts against honey bee mite, Varroa destructor (Acari: Varroidae). World J. Zool., 8 (2): 212-216.

Reyes-Carrillo, J.L., Eischen, F.A., Cano-Rios, P., Rodriguez-Martinez, R., Camberos, U.N. 2007. Pollen collectionand honey bee forage distribution in Cantaloupe. Acta Zoologica Mexicana, 23: 29–36.

Sorger, F. 1998. Einige endemiten aus der Türkischen Pflanzenwelt im Bild. Stapfia 54, Wien, Austria.

Stace, A.C. 1980. Plant Taxonomy and Biosystematics. Edward Arnold Ltd., p.113-176, London.

Sushil, S.N., Stanley, J., Hedau, N.K., Bhatt, J.C. 2013. Enhancing seed

production of three *Brassica* vegetables by honey bee pollination in north-western Himalayas of India. Universal Journal of Agricultural Research, 1: 49–53.

Şenkal, B.C. 2020. The role of secondary metabolites obtained from medicinal and aromatic plants in our lives. ISPEC Journal of Agricultural Sciences, 4(4): 1071-1079.

Terzioğlu, E. 1994. Ülkemizin biyolojik çeşitliliği. Çevre Bakanlığı, Çevre ve İnsan Derg. Yıl 5, Sayı 18, Ankara.

Tutin, H.G., Heywood, V.H. 1964-1980. Flora Europaea, Univ. Press Cambridge, Vol. 1-5.

Tutkun, E. 2000. Teknik arıcılık el kitabı. Türkiye Kalkınma Vakfı, Yayın No:2, Ankara.

Ünal, M., Behçet, L. 1999. Pirreşit dağı (Muradiye, Van-Turkey) florası. Yüksek Lisans Tezi, Yüzüncü Yıl Üniv. Fen Bil. Enst.

Zeyrek, Y., Öztürk, A. 1993. Van kalesi florası, Y.Y.Ü. Fen Bilimleri Enstitüsü Dergisi, 2 (2): 4-26.

Zengin, H., 1998. Bal arısının ziyaret ettiği bitkilerin belirlenmesi. Türkiye II. Herboloji Kongresi (1-4 Eylül 1997). Ege Üniv. Basımevi. 451-456. Bornova-İzmir.