

VICIA TAXA IN THE FLORA OF TURKEY

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ABSTRACT: With the help of this compilation work, approximately, 122 taxa, 66 species, 27 subspecies and 29 varieties of *Vicia* genus have been identified in Turkey. There are 11 endemic species of the Vetch taxa in Turkey. Among existing Vetch taxa, it has been identified that seventy six taxa are annual, twenty six are perennial, six are annual or biennial, five are annual or perennial, one is biennial or perennial and one is biennial. In terms of chromosome numbers of taxa, it has been found that; 44 taxa consist of 14 chromosomes, 14 have 12 chromosomes, 5 have 10 chromosomes and one taxa has 28 chromosomes. Besides, we found that 19 taxa have more than one chromosome numbers. The first three of the most common species according to the provinces where they have been found are *Vicia cracca* L. subsp. *stenophylla* Vel. (31 provinces), *V. speregrina* L. and *V. sativa* L. subsp. *nigra* (L.) Ehrh. (28 provinces).

Keywords: chromosome, taxa, Turkey, vetch, *Vicia*.

TÜRKİYE FLORASINDAKİ VICIA TAKSONLARI

ÖZET: Bu derleme çalışmasında Türkiye’de *Vicia* cinsine ait 66 tür, 27 alt tür ve 29 varyete olmak üzere toplam 122 takson tespit edilmiştir. Bunlardan 11 tanesinin ise endemik olduğu görülmüştür. Mevcut fiğ taksonları içinde 76 adet tek yıllık, 26 adet çok yıllık, 6 adet tek veya iki yıllık, 5 adet tek veya çok yıllık, 1 adet iki veya çok yıllık ve 1 adette iki yıllık fiğ taksonları tespit edilmiştir. Taksonlara ait kromozom sayıları ise; 14 kromozomlu 44 adet, 12 kromozomlu 14 adet, 10 kromozomlu 5 adet ve 28 kromozomlu 1 adet olarak tespit edilmiştir. Ayrıca 19 taksonda birden fazla kromozom sayısının olduğu bulunmuştur. İllere göre en yaygın ilk üç takson sırasıyla, *Vicia cracca* L. subsp. *stenophylla* Vel. (31 il), *V. speregrina* L. ve *V. sativa* L. subsp. *nigra* (L.) Ehrh. (28 il) olmuştur.

Anahtar Sözcükler : kromozom, takson, Türkiye, fiğ, *Vicia*.

1. INTRODUCTION

Turkey is one of the richest countries in the world in terms of natural flora. There are two main reasons for this wealth. The first one is that Anatolia is located among the Mediterranean, the Irano-Turanian and Euro-Siberian floristic regions, and the second one is that it has some parts which gather floristic characteristics of all these places (Davis, 1965-1985). The other important factors contributing to this fact are climate, topographical, geological and geo-morphological diversities and existence of seas, lakes and rivers (Yıldırım, 1981). In addition; other geographical factors such as climatic changes within short distances, diversities due to its morphological characteristics, variety of soil types leading variation of plant formations and causing intra-species diversity.

The number of plant species in Turkey is close to that of the entire Europe (Avcı, 2005). Flora of Turkey includes 174 families, 1251 genera, 9221 species (8988 of them are natural) and 12006 taxa (Erik ve Tarıkahya, 2004). While legumes take 2nd place among all families in Turkey, with its 89 taxons (64 species with 10 endemic ones), 18 sub-species and 7 variety), *Vicia* genus takes 3rd place within this family (Yıldırım, 2005).

Vetch (*Vicia*) genera, which are originated from Vetch similar tribe (*Vicieae*), cover 150 species. While a part of them is found in the New World and South

America, majority are grown in mild climate regions of the Old World (Agar et al., 2006; Gençkan, 1983).

There are some researches completed on Vetch taxa in Turkey. It has been reported that there are 59 species of *Vicia* genus and six of them are endemic (David and Plitmann, 1970). According to Taxonomic Species Database of TUBITAK (Anonymous, 2005), 62 taxa of the genus *Vicia* have been found in Turkey. Plant Data Service of Turkey (TUBIVES) (Anonymous, 2010b) has reported that there are 85 taxa belonging to *Vicia* genus. Vetch species are the plants that grow naturally in grassland and natural vegetation in Turkey. Most of them belong to invasive group (Serin et al., 2008). These vetches are called by the following names in agriculture: the common vetch, the Hungarian vetch, the feathered vetch, the enormous vetch, the tare and the broad bean etc. In addition, they can also be grown with different culture varieties, and common vetch is the most common cultivated one within vetch species. The purposes of its cultivation are green grass, hay, silage, grain feed and seed, graze and green manure production. Vetch species are usually grown in a single form or with a mixture of grasses such as barley, oats. Among forage crops in Turkey, vetch has an important place with its 107.088 ha (48%) area (Avcıoğlu et al., 2000) which supply 111.067 tons of hay and 10.080 tons of seed production (Anonymous, 2010a).

Being put into rotation in farm agriculture, vetches play an important role in increasing productivity and organic substance of soil and decreasing all kinds of

disease, harmful and foreign grass. Additionally, vetches are very important elements of organic farming because of the fact that they provide nitrogen to soil with the help of bacteria that live symbiotically in the roots of vetches.

In this compilation work, by taking into account a number of studies on vetch (*Vicia* L.) in Turkey, the number of vetch species, subspecies, varieties, their chromosome numbers, lifetime, provinces cultivated and endemism have been briefly explained.

2. DISTRIBUTION OF VICIA TAXA IN TURKEY

With this compilation work of existing studies (Agar et al., 2006; Anonymous, 2001; Anonymous, 2005; Anonymous, 2009; Aslan, 1994; Başbag, 2004; İlçim et al., 2008; Özen, 2000; Özhatay et al., 1999; Mutlu and Erik, 1999; Türkoglu and Civelek, 2005; Varol et al., 2004) based on the studies on *Vicia* genus, it has been determined that there are 334 taxons of *Vicia* genus in the world. Among these taxa; 214 species, 65 subspecies and 55 varieties have been identified

As shown in Table 1; 122 taxa of *Vicia* genera, which include 66 species, 27 subspecies and 29 varieties, have been identified in Turkey.

Chromosome numbers of these taxa have been reported to vary between 10 and 28. Forty-four of them have been determined to have 14 chromosomes. Ten and twenty eight chromosomes have been found in ten and one taxa, respectively. Besides, 10 and 14 chromosomes in 12 taxa, 10 and 12 chromosomes in 3 taxa, 10, 12 and 14 chromosomes in 3 taxa, 14 and 28 chromosomes in one taxa, and 12, 14, 16 and 18 chromosomes in one taxa have been observed.

The highest and the lowest chromosome numbers have been found in the following taxa: *V. cracca* and *V. cracca* L. subsp. *cracca* (28 chromosomes), *V. anatolica*, *V. canescens*, *V. ciliatula*, *V. lathyroides*, *V. melanops*, *V. melanops* var. *melanops*, *V. mollis*, *V. sativa*, *V. sativa* subsp. *amphicarpa*, *V. sativa* subsp. *macrocarpa*, *V. sativa* subsp. *nigra* and *V. sativa* subsp. *sativa* (10 chromosomes).

Among all *Vicia* taxa, 11 are endemic, and therefore these have been put in the following categories: five of them are in “danger”, three are in “minimal worrisome”, two of them are in “vulnerable” and one taxon is in “must be protected”. Among all taxa genera, 68 taxa are in “non-endemic rare plants”, 6 taxa are in “worrisome”, 7 taxa are in “not enough data” and one taxon is in “has not been taken into account yet” categories.

The existing vetch taxa can be grouped in terms of their life forms as follows: 76 are annual, 26 are perennial, 6 are annual or biennial, 5 are annual or perennial, one is biennial or perennial and one is biennial. No records could be found for 7 taxa. The most common species according to the number of provinces where they have been found are *V. cracca* L. subsp. *stenophylla* Vel. (31 provinces), *Vicia speregrina* L. and *V. sativa* L. subsp. *nigra* (L.) Ehrh. (28 provinces), *V. abbreviata* (21 provinces), *V. hybrida* (19 provinces), *V. narbonensis* L. var. *narbonensis* and *V. sativa* L. subsp. *sativa* (18 provinces), *V. grandiflora* var. *grandiflora* (17 provinces). On the other hand, the least common species are *V. barbazitae* Guss. var. *barbazitae*, *V. canescens*, *V. canescens* Lab. subsp. *canescens*, *V. glareosa*, *V. hybrida* Scop. var. *grandiflora*, *V. michauxii* Sprenger var. *michauxii*, *V. monantha*, *V. ohwiana*, *V. pannonica*, *V. pannonica* subsp. *striata*, *V. parvula* and *V. sparsiflora* (only one province).

Results of this compilation study show that Turkey has rich diversity of *Vicia* genus.. This information can be used as a reference for any future studies to be planned on vetches.

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Table 1. *Vicia* taxa in the flora of Turkey

N.	<i>Vicia</i> Taxa	Endemism/ Category *	Lifeti me **	Chromo- somes (2n)	Provinces
1	<i>Vicia abbreviata</i> Spreng.	-	A or P (10)	12, 14 (42) ***	Ankara, Antalya, Artvin, Bartın, Bingöl, Bursa, Çankırı, Erzurum, Eskişehir, Hatay, Isparta, İçel, İstanbul, Kastamonu, Kars, Kayseri, Sakarya, Samsun, Rize, Trabzon, Van ^(10, 20, 25, 33, 46)
2	<i>Vicia aintabensis</i> Boiss. & Hausskn. ex Boiss.	N(VU) (6, 24)	A (6)	14 (29, 39)	Diyarbakır, Gaziantep, Malatya, Şanlıurfa, Van ^(6, 10, 20, 29, 30, 41)
3	<i>Vicia alpestris</i> Stev.	-	P (20)	-	Erzincan, Tunceli ⁽⁴⁵⁾
4	<i>Vicia alpestris</i> Stev. subsp. <i>alpestris</i>	N (6)	P (6, 10)	-	Erzincan, Erzurum, Hakkari, Kahramanmaraş, Rize, Siirt, Van ^(6, 10, 20, 46)
5	<i>Vicia alpestris</i> Stev. subsp. <i>hypoleuca</i> (Boiss.) P.Davis	E(LR, lc) (6, 10)	P (6, 10)	-	Ardahan, Elazığ, Erzincan, Gümüşhane, İçel, Kahramanmaraş, Kars, Niğde, Rize, Tunceli, Van ^(6, 10, 20, 46)
6	<i>Vicia anatolica</i> Turrill	N (6)	A (6, 10)	10 (31)	Afyon, Ağrı, Ankara, Antalya, Bitlis, Çorum, Denizli, Diyarbakır, Eskişehir, Mardin, Muğla, Şanlıurfa ^(6, 10, 20, 23, 27, 46)
7	<i>Vicia articulata</i> Hornem.	N (6)	A (6)	14 ⁽⁴²⁾	Ankara, Aydın, Çanakkale, Edirne, İzmir, Manisa, Muğla, Van ^(6, 9, 10, 20, 41, 43)
8	<i>Vicia assyriaca</i> Boiss.	N (6)	A (6)	12, 14 (31)	Diyarbakır, Gaziantep, Kahramanmaraş, Malatya, Şanlıurfa, Van ^(6, 10, 17, 20, 30)
9	<i>Vicia balansae</i> Boiss.	N(VU) (6, 24)	P (6)	12, 14 (29, 41)	Artvin, Bayburt, Erzurum, Giresun, Kars, Rize, Trabzon, Van ^(6, 10, 20)
10	<i>Vicia barbazitae</i> Ten. Et Guss.	N(VU) (6, 24)	A (6)	14 (30, 42)	Amasya, Aydın, İzmir, Van ^(6, 10, 20, 41, 43)
11	<i>Vicia barbazitae</i> Guss. var. <i>barbazitae</i> Ten. & Guss.	-	A (17)	14 (29, 41)	Kahramanmaraş ⁽¹⁷⁾
12	<i>Vicia barbazitae</i> Guss. var. <i>incisa</i>	-	-	14 ⁽²⁹⁾	Türkiye ⁽³⁰⁾
13	<i>Vicia biennis</i> L.	N(DD) (6, 24)	A or B (6)	14 (28)	Iğdır, Kars, Van ^(6, 10, 20)
14	<i>Vicia bithynica</i> L.	N (6)	A (6)	14 (31)	Amasya, Antalya, Aydın, Bursa, Çanakkale, Hatay, İstanbul, İzmir, Sinop, Van ^(6, 10, 14, 20, 30)
15	<i>Vicia caesarea</i> Boiss. & Bal.	E(LR, lc) (6, 24)	A (6)	12 ⁽⁴¹⁾	Aksaray, Ankara, Isparta, Karaman, Kayseri, Konya, Nevşehir, Niğde, Yozgat, Van ^(6, 10, 20)
16	<i>Vicia canescens</i> Lab.	-	P (5)	10 (3)	Erzurum ⁽¹⁰⁾
17	<i>Vicia canescens</i> Lab. subsp. <i>argaea</i> P.H. Davis	E(EN) (6, 24)	P (6)	-	Kayseri, Van ^(6, 10, 20)
18	<i>Vicia canescens</i> Lab. subsp. <i>canescens</i> P.H. Davis	-	-	-	Hatay ⁽⁴³⁾
19	<i>Vicia canescens</i> Lab. subsp. <i>gregaria</i> (Boiss. & Heldr.) P.Davis	N (6)	P (6, 10)	-	Antalya, Hakkari, İçel, Kahramanmaraş, Kayseri, Muş, Niğde, Van ^(6, 10, 20)
20	<i>Vicia canescens</i> Lab. subsp. <i>leucomalla</i> (Bornm.) Davis	E(LR, cd) (6, 24)	P (6)	-	Aksaray, Bitlis, İçel, Niğde, Van ^(6, 10, 20, 46)
21	<i>Vicia canescens</i> Labill. subsp. <i>variegata</i> (Willd.) P.Davis	N (6)	P (6, 10)	-	Ağrı, Bayburt, Erzincan, Erzurum, Gümüşhane, Iğdır, Kars, Muş, Sivas, Trabzon, Van ^(6, 10, 20)
22	<i>Vicia cappadocica</i> Boiss. Et Bal.	N (6)	A (6, 10)	14 (40)	Afyonkarahisar, Ankara, Bitlis, Elazığ, Eskişehir, Kayseri, Sivas, Van ^(6, 10, 20)
23	<i>Vicia cassia</i> Boiss.	N (6)	A (6)	14 (30)	Adana, Antalya, Burdur, Hatay, Isparta, İçel, Muğla, Van ^(6, 10, 20)
24	<i>Vicia ciliatula</i> Lipsky	N (6)	A (6)	10 (31)	Bolu, Kastamonu, Samsun, Trabzon, Van, Zonguldak ^(6, 10, 20, 30)
25	<i>Vicia cracca</i> L.	-	B or P (5)	14, 28 (42)	Diyarbakır, Muğla ^(8, 9)
26	<i>Vicia cracca</i> L. subsp. <i>atroviolacea</i> (Bornm.)	N (6)	P (6)	-	Ankara, Antalya, Artvin, Balıkesir, Erzurum, Gümüşhane, Isparta, Konya, Kütahya, Van ^(6, 10, 13, 20, 25)
27	<i>Vicia cracca</i> L. subsp. <i>cracca</i>	N ⁽⁶⁾	P (6, 9, 10)	28 (36)	Ağrı, Amasya, Bayburt, Diyarbakır, Edirne, Erzurum, Giresun, Hakkari, İstanbul, Karaman, Kars, Rize, Sakarya, Trabzon, Van ^(6, 8, 10, 14, 20, 36, 37)
28	<i>Vicia cracca</i> L. subsp. <i>gerardii</i> Gaudin	N (6)	P (6)	-	Ankara, Bursa, Çankırı, Çorum, İstanbul, Kastamonu, Kırklareli, Tokat, Van, Yalova ^(6, 10, 20)
29	<i>Vicia cracca</i> L. subsp. <i>stenophylla</i> Vel.	N (6)	P (6, 10)	14 (40)	Amasya, Ankara, Antalya, Aydın, Balıkesir, Bitlis, Bolu, Çanakkale, Çankırı, Elazığ, Erzurum, Gaziantep, Gümüşhane, Isparta, İçel, İstanbul, İzmir, Kahramanmaraş, Kırklareli, Kırşehir, Kocaeli, Konya, Kütahya, Muğla, Rize, Samsun, Şanlıurfa, Siirt, Sivas, Yozgat, Van ^(2, 6, 7, 10, 11, 14, 20, 23, 41, 43)

Vicia taxa of Turkey

Table 1. (Continue)

30	<i>Vicia cracca</i> L. subsp. <i>tenuifolia</i> (Roth) Gaudin	N (6)	B (6, 10)	14 (3)	Ağrı, Amasya, Artvin, Bitlis, Elazığ, Erzurum, Gümüşhane, Hakkari, Kars, Van ^(6, 7, 10, 14, 20, 44)
31	<i>Vicia cretica</i> Boiss. Et Heldr.	N (6)	A or B (6)	-	Muğla, Van ^(6, 10, 20)
32	<i>Vicia cretica</i> Boiss. & Heldr. subsp. <i>cretica</i> Boiss. & Heldr.	-	A (5)	-	Türkiye ⁽⁵⁾
33	<i>Vicia crocea</i> (Desf.) Fritsch	N (6)	P (6)	-	Amasya, Artvin, Bolu, Gümüşhane, Hatay, Kastamonu, Rize, Samsun, Sinop, Trabzon, Van, Zonguldak ^(6, 10, 20)
34	<i>Vicia cuspidata</i> Boiss.	N (6)	A (6)	12 (29)	Antalya, Aydın, Bitlis, Çanakkale, Denizli, Edirne, Elazığ, Gaziantep, Hatay, Isparta, İçel, İzmir, Kahramanmaraş, Konya, Manisa, Muğla, Şanlıurfa, Van ^(6, 7, 10, 20, 30, 35, 41, 43, 44)
35	<i>Vicia cypria</i> Kotschy ex Unger & Kotschy	N (6, 24)	A (6)	-	Hatay, Kahramanmaraş, Van ^(6, 10, 17, 20)
36	<i>Vicia dadianorum</i> Somm. Et Lev.	N (6)	P (6)	-	Artvin, Erzurum, Rize, Trabzon, Van ^(6, 10, 20)
37	<i>Vicia eristalioides</i> Maxted	E(EN) (6, 24)	A (6)	14 (31)	Antalya, Muğla ^(6, 30)
38	<i>Vicia ervilia</i> (L.) Willd.	N ⁽⁶⁾	A ⁽⁶⁾	14 ⁽⁴²⁾	Afyonkarahisar, Ankara, Çanakkale, Çankırı, Diyarbakır, Elazığ, Gaziantep, Hakkari, İçel, İstanbul, İzmir, Kocaeli, Muğla, Muş, Siirt, Van ^(6, 8, 10, 20, 33, 35)
39	<i>Vicia erzurumica</i> Demirkuş & Erik	E(VU) (6, 24)	P (6, 10)	-	Erzurum, Van ^(6, 10)
40	<i>Vicia esdraelonensis</i> Warb. & Eig	N(VU) (24)	A (6)	12 (31)	Diyarbakır, Şanlıurfa, Van ^(6, 8, 10, 20)
41	<i>Vicia faba</i> L.	N (6)	A (6)	12, 14 (15, 31)	Adıyaman, Aydın, Bilecik, Erzurum, Gaziantep, İçel, İstanbul, Kahramanmaraş, Manisa, Van ^(1, 6, 10, 11, 20, 26, 35, 41, 43, 46)
42	<i>Vicia faba</i> L. subsp. <i>faba</i> var. <i>faba</i> L.	-	A (30)	12, 14 (29, 30)	Antalya, İzmir ^(5, 30)
43	<i>Vicia freyniana</i> Bornm.	E(LR, lc) (24)	P (6)	-	Antalya, Artvin, Giresun, Gümüşhane, Kastamonu, Karabük, Trabzon, Van ^(6, 10, 13, 20, 25)
44	<i>Vicia galeata</i> Boiss.	N (6, 24)	A (6)	12, 14 (31)	Adana, Ankara, Antalya, Diyarbakır, Hatay, Tokat, Van ^(6, 8, 10, 20, 30)
45	<i>Vicia galileae</i> Plitm. Et Zoh.	N (6)	A (6)	14 (31)	Antalya, Bitlis, Edirne, Elazığ, Hatay, İçel, İstanbul, Konya, Muğla, Tekirdağ, Yozgat, Van ^(6, 10, 20)
46	<i>Vicia galileae</i> var. <i>faboidea</i> (Plitm. & Zoh. in Plitm.) H. Schafer	-	A (31)	14 (31, 41)	Antalya, Çanakkale, Hatay, İçel, Muğla, Şanlıurfa, Yozgat ⁽³⁰⁾
47	<i>Vicia glareosa</i> P. H. Davis	E(EN) (6, 24)	P (5)	-	Tunceli ⁽²⁰⁾
48	<i>Vicia grandiflora</i> Scop.	-	A (9)	12, 14 (31)	Aydın, Edirne ^(9, 41, 43)
49	<i>Vicia grandiflora</i> Scop. var. <i>dissecta</i> Boiss.	-	A (6)	14 (46)	Aydın, Bursa, İstanbul, Manisa, Van ^(6, 10, 20, 30)
50	<i>Vicia grandiflora</i> var. <i>grandiflora</i> Scop.	N (6)	A (6)	14 (31)	Adana, Antalya, Artvin, Aydın, Balıkesir, Bilecik, Çanakkale, Çorum, Edirne, Gaziantep, Hatay, İstanbul, İzmir, Kahramanmaraş, Kastamonu, Manisa, Van ^(6, 10, 20, 35, 41, 43)
51	<i>Vicia grandiflora</i> var. <i>incisa</i>	-	-	-	İzmir, Manisa ⁽³⁰⁾
52	<i>Vicia hirsuta</i> (L.) Gray	N (6, 24)	A (6, 9)	14 (42)	Amasya, Ankara, Bolu, Çanakkale, Edirne, Gaziantep, Hatay, İstanbul, İzmir, Kırklareli, Muğla, Samsun, Van ^(6, 7, 9, 10, 20)
53	<i>Vicia hybrida</i> L.	N (6)	A (6, 9, 10)	12 (31)	Adana, Antalya, Aydın, Çanakkale, Diyarbakır, Edirne, Hatay, Gaziantep, İstanbul, İzmir, Kahramanmaraş, Kilis, Kocaeli, Manisa, Mardin, Muğla, Samsun, Şanlıurfa, Van ^(2, 6, 8, 9, 10, 11, 20, 26, 30, 41, 43)
54	<i>Vicia hybrida</i> Scop. var. <i>grandiflora</i>	-	A (17)	-	Kahramanmaraş ⁽¹⁷⁾
55	<i>Vicia hyrcanica</i> Fisch. & Mey.	N (6)	A (6, 10)	12, 14 (31)	Bitlis, Çorum, Diyarbakır, Erzurum, Iğdır, Kars, Siirt, Sivas, Muş, Van ^(6, 8, 10, 20, 30)
56	<i>Vicia johannis</i> Tamamsch.	-	A (5)	14 (31)	Antalya, İçel, Erzurum, Gaziantep, Kahramanmaraş ^(31, 32)
57	<i>Vicia johannis</i> var. <i>johannis</i> Tamamsch.	-	A (5)	14 (31, 41)	Antalya, Kayseri, Türkiye ^(5, 30)
58	<i>Vicia johannis</i> var. <i>procumbens</i> H. Schafer	-	A (5)	14 (31, 41)	Adana, Ankara, Bolu, Çanakkale, Elazığ, Malatya, Türkiye ⁽³⁰⁾

Table 1. (Continue)

59	<i>Vicia koeieana</i> Rech. Fil.	N (6, 24)	A (6, 10)	14 (40)	Bitlis, Elazığ, Hakkari, Malatya, Muş, Van ^(6, 10, 20)
60	<i>Vicia lathyroides</i> L.	N ⁽⁶⁾	A ^(6, 9, 10)	10, 12 (31)	Aydın, Antalya, Artvin, Bitlis, Çanakkale, Edirne, Elazığ, Gaziantep, İçel, İstanbul, İzmir, Kahramanmaraş, Kırklareli, Muğla, Şanlıurfa, Van ^(6, 9, 10, 11, 20, 30, 41, 43, 44)
61	<i>Vicia laxiflora</i> Brot.	N (6)	A (6)	14 (46)	Aydın, Antalya, Bursa, Çanakkale, Hakkari, İstanbul, İzmir, Muğla, Van ^(6, 10, 20, 41, 43)
62	<i>Vicia lunata</i> (Boiss. & Bal.) Boiss.	N (6)	A (6)	14 (30)	Elazığ, İzmir, Muğla ⁽⁶⁾
63	<i>Vicia lunata</i> (Boiss. & Bal.) Boiss. var. <i>lunata</i> Plitm.	N (6)	A (6)	-	Elazığ, İzmir, Muğla, Van ^(6, 10, 20)
64	<i>Vicia lunata</i> (Boiss. & Bal.) Boiss. var. <i>grandiflora</i> Plitm.	N (DD) (6, 24)	A (6, 10)	-	Hatay, Kahramanmaraş, Van ^(6, 10, 11, 20)
65	<i>Vicia lutea</i> L.	-	A (5)	14 (31)	Adana, Antalya, Aydın, Hatay, İçel, İzmir, Mardin ^(13, 30, 43)
66	<i>Vicia lutea</i> L. var. <i>lutea</i> Boiss. Et Ball.	N (DD) (6, 24)	A (6)	14 (22)	İstanbul, Kocaeli, Van ^(6, 10, 20)
67	<i>Vicia lutea</i> L. var. <i>hirta</i> (Balbis) Lois.	N (6)	A (6, 9)	14 (40)	Amasya, Aydın, Çanakkale, Diyarbakır, Edirne, İstanbul, İzmir, Kastamonu, Kütahya, Van ^(6, 8, 9, 10, 20, 41, 43)
68	<i>Vicia melanops</i> Sibth. Et Sm.	N (6)	A (6, 9)	10 (31)	Çanakkale, Edirne, İstanbul, İzmir, Van ^(9, 10, 20)
69	<i>Vicia melanops</i> var. <i>loiseaui</i>	-	-	-	Aydın, Denizli, İzmir, Manisa ⁽³⁰⁾
70	<i>Vicia melanops</i> Sibth. & Sm. var. <i>melanops</i> Sibth. & Sm.	-	A ⁽⁵⁾	10 ⁽³¹⁾	Türkiye ⁽³⁰⁾
71	<i>Vicia meyeri</i> Boiss.	N ⁽⁶⁾	A ⁽⁶⁾	-	Aydın, İstanbul, İzmir, Samsun, Van ^(6, 10, 20, 41, 43)
72	<i>Vicia michauxii</i> Sprenger	-	A (5)	12, 14 (31)	Diyarbakır, Erzurum, Gaziantep, Kahramanmaraş, Mardin, Şanlıurfa, Trabzon ^(8, 10, 30)
73	<i>Vicia michauxii</i> Sprenger var. <i>michauxii</i>	NE (6)	A (8)	-	Diyarbakır ⁽¹²⁾
74	<i>Vicia michauxii</i> Sprengel var. <i>stenophylla</i> Boiss.	N (VU) (6, 24)	A (6)	14 (39)	Diyarbakır, Elazığ, Hatay, Kilis, Mardin, Van ^(6, 10, 12, 20)
75	<i>Vicia mollis</i> Boiss. Et Hausskn. Ex Boiss.	N (6)	A (6)	10, 14 (31)	Adıyaman, Diyarbakır, Gaziantep, Kahramanmaraş, Kilis, Malatya, Mardin, Osmaniye, Şanlıurfa, Şırnak, Van ^(6, 8, 10, 20, 30)
76	<i>Vicia monantha</i> Retz.	-	A (5)	-	Kahramanmaraş ⁽¹⁷⁾
77	<i>Vicia monantha</i> Retz. subsp. <i>monantha</i> Retz.	N (6)	A (6)	14 (22)	Ankara, Konya, Sivas, Muğla ⁽²⁰⁾
78	<i>Vicia montbretii</i> Fisch. & C.A. Mey.	-	A (5)	-	Türkiye ⁽⁵⁾
79	<i>Vicia narbonensis</i> L.	-	A or P (5)	14 (31)	Ankara, Antalya, Çanakkale, Diyarbakır, Hatay, Gaziantep, Gümüşhane, Kahramanmaraş, Şanlıurfa ^(8, 13, 20, 30, 32)
80	<i>Vicia narbonensis</i> L. var. <i>affinis</i> Asch. & Schweinf.	-	A (5)	-	Adıyaman, İzmir, Şanlıurfa, Türkiye ⁽³⁰⁾
81	<i>V. narbonensis</i> var. <i>jordanica</i>	-	A (31)	14 (31)	Türkiye ⁽³⁰⁾
82	<i>Vicia narbonensis</i> L. var. <i>narbonensis</i>	N (6)	A (6)	14 (31)	Amasya, Ankara, Aydın, Bitlis, Çanakkale, Diyarbakır, Elazığ, Isparta, İçel, İstanbul, Kahramanmaraş, Kastamonu, Mardin, Osmaniye, Samsun, Şanlıurfa, Tekirdağ, Tokat, Van ^(6, 10, 11, 13, 20, 21, 22, 25, 30, 44)
83	<i>Vicia narbonensis</i> L. var. <i>salmonea</i> (Mouterde) H. I. Schafer	-	A (5)	14 (31, 41)	Türkiye ⁽³⁰⁾
84	<i>Vicia narbonensis</i> L. var. <i>serratifolia</i>	N (6)	A (5, 6)	14 (29, 42)	Adana, Ağrı, Antalya, Hatay, İçel, İstanbul, Van ^(10, 13, 20, 30, 41)
85	<i>Vicia noeana</i> Reuter Ex Boiss.	-	A (5)	12 (31)	Türkiye ⁽³⁰⁾
86	<i>Vicia noeana</i> Reuter ex Boiss var. <i>megalodonta</i> Reuter ex Boiss.	N (6)	A (6)	12 (31)	Diyarbakır, Hakkari, Mardin, Siirt, Şanlıurfa, Van ^(6, 10, 20, 30)
87	<i>Vicia noeana</i> subsp. <i>neona</i>	-	-	12 (31)	Adıyaman, Ankara, Bolu, Çankırı, Düzce, Eskişehir, Erzurum, Gaziantep, Kahramanmaraş, Kilis, Konya, Sivas, Zonguldak ⁽³⁰⁾
88	<i>Vicia noeana</i> Reuter ex Boiss. var. <i>noeana</i> Reuter ex Boiss.	N (6)	A (6)	12, 14 (29, 30)	Ankara, Bingöl, Çankırı, Diyarbakır, Elazığ, Erzurum, Gaziantep, Gümüşhane, Kastamonu, Konya, Van ^(6, 8, 10, 20, 46)

Vicia taxa of Turkey

Table 1. (Continue)

89	<i>Vicia ohwiana</i> Hosok.	-	P (5)	-	Diyarbakır ⁽⁸⁾
90	<i>Vicia onobrychioides</i> L.	-	A or P (5)	-	Adana, Trabzon ^(25, 46)
91	<i>Vicia palaestina</i> Boiss.	N (6)	A (6)	14 (36, 46)	Aydın, Diyarbakır, Gaziantep, Hatay, İzmir, Mardin, Şanlıurfa, Van ^(6, 8, 10, 20, 41, 43)
92	<i>Vicia pannonica</i> Crantz	-	A (5, 9)	12 (31)	Edirne ⁽⁹⁾
93	<i>Vicia pannonica</i> subsp. <i>pannonica</i> Crantz	-	A (6, 10)	12 (31, 46)	Artvin, Bilecik, Bolu, Çanakkale, Erzurum, Isparta, İstanbul, Sakarya, Van ^(6, 10, 20, 30, 46)
94	<i>Vicia pannonica</i> subsp. <i>striata</i>	-	-	12 ⁽³¹⁾	Sivas ⁽³⁰⁾
95	<i>Vicia pannonica</i> Crantz subsp. <i>purpurascens</i>	N (6)	A (6, 10)	12 (29)	Antalya, Bilecik, Bolu, Bursa, Çanakkale, İstanbul, Manisa, Tekirdağ, Uşak, Van ^(6, 10, 13, 20)
96	<i>Vicia parvula</i> J. Zielinski	E (EN) (6, 24)	A (6)	-	Ankara ^(6, 24)
97	<i>Vicia peregrina</i> L.	N ⁽⁶⁾	A (6, 9, 10)	12, 14 (24, 31, 46)	Adana, Afyonkarahisar, Amasya, Ankara, Antalya, Aydın, Bitlis, Çanakkale, Diyarbakır, Edirne, Erzincan, Gaziantep, Hatay, Iğdır, İstanbul, İzmir, Kars, Kayseri, Konya, Mardin, Muğla, Niğde, Siirt, Şanlıurfa, Şırnak, Trabzon, Tokat, Van ^(6, 9, 10, 12, 13, 20, 30, 35, 41, 43)
98	<i>Vicia pubescens</i> (DC.) Link	N ⁽⁶⁾	A ⁽⁶⁾	14 (18, 36)	Antalya, İçel, İstanbul, İzmir, Muğla, Samsun, Van ^(6, 10, 13, 20)
99	<i>Vicia quadrijuga</i> P.Davis	E (EN) (6, 20, 24)	A (6)	-	Gümüşhane, Muğla, Van ^(6, 10, 20, 23, 24)
100	<i>Vicia rafifgae</i> Tamamsch.	N (VU) ^(6, 24)	P (6)	-	Hakkari, Van ^(6, 10, 20)
101	<i>Vicia sativa</i> L.	-	A or P (5, 9)	10, 12, 14 (31)	Diyarbakır, Edirne ^(8, 9)
102	<i>Vicia sativa</i> L. subsp. <i>amphicarpa</i> (L.) Battand.	N (6)	A (6)	10, 12, 14 (31)	Antalya, Çanakkale, Diyarbakır, İçel, İstanbul, Tokat, Van ^(6, 8, 10, 20, 30)
103	<i>Vicia sativa</i> L. subsp. <i>incisa</i>	-	A (5)	14 (31, 41)	Türkiye ⁽³⁰⁾
104	<i>Vicia sativa</i> L. subsp. <i>incisa</i> (Bieb.) Arc. var. <i>incisa</i> (L.) Fourr.	N (DD) (6, 24)	A (6)	14 (32)	Amasya, Edirne, İstanbul, Van ^(6, 10, 14, 20, 22, 32)
105	<i>Vicia sativa</i> L. subsp. <i>macrocarpa</i> (Bert.) Kiffm	N (DD) (6, 24)	A (6)	10, 12 (31)	İstanbul, Van ^(10, 20)
106	<i>Vicia sativa</i> L. subsp. <i>nigra</i> (L.) Ehrh.	-	A or P (5, 6, 10)	10, 12, 14 (31, 46)	Ağrı, Amasya, Antalya, Artvin, Bitlis, Bolu, Bursa, Diyarbakır, Edirne, Erzincan, Hakkari, Isparta, İçel, İstanbul, İzmir, Kahramanmaraş, Karaman, Kırklareli, Kocaeli, Kütahya, Manisa, Muğla, Samsun, Sivas, Şırnak, Trabzon, Van, Türkiye ^(5, 6, 8, 9, 10, 20, 22, 24, 26, 30, 38)
107	<i>Vicia sativa</i> L. subsp. <i>nigra</i> (L.) Ehrh. var. <i>nigra</i> (L.) Ehrh.	N (6)	A (19)	12 (22)	Ankara, Antalya, Artvin, Diyarbakır, Elazığ, Erzincan, İstanbul, Kars, Konya, Rize, Samsun, Şanlıurfa, Van ^(2, 6, 9, 20, 44)
108	<i>Vicia sativa</i> L. subsp. <i>sativa</i>	N (6)	A (6)	10, 12 (31)	Adana, Afyonkarahisar, Amasya, Antalya, Bitlis, Elazığ, Erzurum, Gaziantep, İçel, İstanbul, Kahramanmaraş, Kastamonu, Kocaeli, Mardin, Muğla, Samsun, Tekirdağ, Van ^(6, 10, 11, 13, 20, 22, 24, 44)
109	<i>Vicia semiglabra</i> Rupr. Ex Boiss.	N (DD) (6, 24)	P (6)	-	Iğdır, Kars, Van ^(6, 10, 20)
110	<i>Vicia sepium</i> Linnaeus	N (6)	P (6)	12, 14, 16, 18 (31)	Artvin, Erzurum, Kars, Rize, Van ^(6, 10, 20)
111	<i>Vicia sepium</i> L. var. <i>montana</i> Koch	-	P (5)	14 (31)	Artvin, Erzurum ^(25, 30)
112	<i>Vicia sericocarpa</i> Fenzl	-	-	12 (31, 41)	Adana, Adıyaman, Aksaray, Hatay, İçel, Karaman, Konya, Mardin, Niğde, Şanlıurfa ^(30, 41)
113	<i>Vicia sericocarpa</i> Fenzl var. <i>sericocarpa</i> Fenzl	N (6)	A (19)	12 (40)	Adana, Antalya, Bursa, Diyarbakır, Elazığ, Gaziantep, Hatay, İçel, Kahramanmaraş, Malatya, Mardin, Osmaniye, Van ^(6, 10, 20)
114	<i>Vicia sibthorpii</i> Boiss.	N (DD) (6, 24)	P (6)	14 (16)	Kocaeli, Van ^(6, 10, 20)
115	<i>Vicia sparsiflora</i> Ten.	-	P (5)	12 (42)	Diyarbakır ⁽⁸⁾
116	<i>Vicia splendens</i> P.H. Davis	E (VU) (6, 20, 24)	P (6)	-	Hakkari, Van ^(6, 10, 20)

Table 1. (Continue)

117	<i>Vicia tetrasperma</i> (L.) Schreber	N (6)	A (6, 9)	14 (42)	Bolu, Bursa, Edirne, Hakkari, Hatay, İstanbul, Kocaeli, Samsun, Tekirdağ, Trabzon, Van ^(6, 9, 10, 20)
118	<i>Vicia villosa</i> Roth	-	A or B (20)	14 (42)	Ankara, Aydın, İçel ^(4, 41, 43, 46)
119	<i>Vicia villosa</i> Roth subsp. <i>dasycarpa</i> (Ten.) Cav.	N ⁽⁶⁾	A or B (6, 9)	14 (46)	Ankara, Bolu, Düzce, Edirne, Isparta, İstanbul, Muğla, Sivas, Şanlıurfa, Van ^(6, 9, 10, 20, 23)
120	<i>Vicia villosa</i> Roth subsp. <i>eriocarpa</i> (Hausskn.) P.Ball	N (6)	A or B (6, 10)	-	Ankara, Antalya, Aydın, Bolu, Çanakkale, Düzce, Edirne, İçel, İstanbul, İzmir, Manisa, Muğla, Uşak, Van ^(6, 10, 20, 26, 41, 43)
121	<i>Vicia villosa</i> Roth subsp. <i>microphylla</i> (d'Urv.) P.W. Ball	-	A (20)	-	Antalya, Aydın, Erzurum, İzmir, Muğla ^(20, 41, 43, 46)
122	<i>Vicia villosa</i> Roth subsp. <i>villosa</i> Roth	N (6)	A or B (6, 10)	14 (30)	Adana, Ankara, Antalya, Aydın, Balıkesir, Bingöl, Erzincan, Erzurum, Hatay, İstanbul, Kastamonu, Muğla, Siirt, Tekirdağ, Van ^(6, 10, 13, 20, 41, 43)

*E: Endemic, N: Non-endemic rare plants (LR: Lower risk; LR (lc): Least concern; LR (cd): Conservation dependent; VU: Vulnerable; EN: Endangered;

NE: Not evaluated; DD: Data deficient)

**A: Annual, B: Biennial, P: Perennial

***⁽¹⁾Agar et al., 2006; ⁽²⁾Akçin et al., 2010; ⁽³⁾Akpınar and Bilaloğlu, 1997; ⁽⁴⁾Altınok and Hakyemez, 2002; ⁽⁵⁾Anonym, 2009; ⁽⁶⁾Anonym, 2010b; ⁽⁷⁾Anonym, 2010c; ⁽⁸⁾Aslan, 1994; ⁽⁹⁾Aybeke et al., 2007; ⁽¹⁰⁾Bakoglu et al., 1999; ⁽¹¹⁾Başaran, 2006; ⁽¹²⁾Başbağ, 2004; ⁽¹³⁾Bulut, 2006; ⁽¹⁴⁾Cansaran, 2002; ⁽¹⁵⁾Ceccarelli et al., 1995; ⁽¹⁶⁾Constantinidis and Kamari, 2000; ⁽¹⁷⁾Cenet et al., 2006; ⁽¹⁸⁾Dalgaard, 1985; ⁽¹⁹⁾Dane and Meric, 1999; ⁽²⁰⁾David and Plitmann, 1970; ⁽²¹⁾Davis, 1965-1985; ⁽²²⁾Davis et al., 1988; ⁽²³⁾Doğru, 2002; ⁽²⁴⁾Ekim et al., 2000; ⁽²⁵⁾Eminağaoğlu and Anşin, 2004; ⁽²⁶⁾Gücel et al., 2008; ⁽²⁷⁾Güner et al., 1980; ⁽²⁸⁾Heywood and Ball, 1968; ⁽²⁹⁾Love, 1972; ⁽³⁰⁾Maxted et al., 1991; ⁽³¹⁾Maxted, 1995; ⁽³²⁾Meriç and Dane, 1999; ⁽³³⁾Öner and İmal, 2006; ⁽³⁴⁾Özen, 2000; ⁽³⁵⁾Özuslu, 2004; ⁽³⁶⁾Raina and Rees, 1983; ⁽³⁷⁾Sağlam and Ünal, 2007; ⁽³⁸⁾Sorger, 1978; ⁽³⁹⁾Şahin and Babaç, 1990; ⁽⁴⁰⁾Şahin and Babaç, 1995; ⁽⁴¹⁾Şahin et al., 1996; ⁽⁴²⁾Terziiski, 1987; ⁽⁴³⁾Türkmen and Düzenli, 1995; ⁽⁴⁴⁾Türkoğlu and Civelek, 2005; ⁽⁴⁵⁾Yıldırım, 1981; ⁽⁴⁶⁾Yıldırım, 2005.

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