



## An ethnobotanical study from Kars (Eastern) Turkey

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### Abstract

In this study, the utilization of the plants by the local people in Kars and surrounding villages were investigated. Despite the difficulty of the transportation to the villages, interviews were carried out face-to-face with the community. At the end of the field studies, 95 taxa included in 32 families, which are actually used, were recorded. The utilization of the plants was divided into three categories; as drug, food and for other purposes. The scientific names of the plants, local names, families, usable parts and forms of utilization were listed alphabetically in the tables.

**Key words:** Ethnobotany, Kars province, Turkey

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### Türkiye'nin doğusu Kars'dan bir etnobotanik çalışma

#### Özet

Bu araştırma Kars ve çevresindeki köylerde bitkilerin halk arasındaki kullanımını saptamak amacıyla yapılmıştır. Köylere ulaşım zor olmasına rağmen, görüşmeler yöre halkı ile yüzyüze röportaj şeklinde yapılmıştır. Yapılan arazi çalışmaları sonucu 32 familyaya ait kullanımı olan toplam 95 takson kaydedilmiştir. Bitkilerin kullanımları, ilaç, gıda ve diğer kullanımlar olmak üzere 3 kategoride toplanmıştır. Tablolarda bitkilerin bilimsel adları, yöresel adları, familyaları, kullanılan kısımları ve kullanım şekilleri bilimsel adlarına göre alfabetik olarak verilmiştir.

**Anahtar kelimeler:** Etnobotanik, Kars çevresi, Türkiye

#### 1. Introduction

Turkey is rich in flora and approximately 10.000 varieties of plants are growing naturally (Davis et al., 1965-85; 1988; Güner et al., 2000; Özhatay and Kültür 2006; Özhatay et al. 2009). Local people are using the plants those are growing naturally in proximity for many different purposes. The studies performed in recent years exhibit the considerable importance of the utilization of the plants by the local people (Baytop, 1999; Sezik et al., 1992; Ertuğ, 2000; Şimşek et al., 2002; Türkan et al., 2006; Kültür, 2007; 2008; Kültür and Sami, 2009; Yücel et. al., 2010; Koyuncu et al., 2010; Cansaran and Kaya, 2010). These researchers denote that approximately 500 plants are used for medical purposes in Turkey. There are some ethnobotanical studies implemented in this region previously (Zeybek, 1960; Öztürk and Özçelik, 1991; Baytop, 1988; Altan et al., 1999). Akgül (2008) investigated the local names and ethnobotanic properties of some wild plants growing in Çıldır (Ardahan) and around. The study includes the local names of 65 species and their utilization by the community. The plants used by the people are changing according to the regions. As emphasized by Akgül (2008), the same plant could have different local names and different ways of usage in different regions, provinces, towns even in villages.

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There is no study performed in that area of research before about the local names and ethnobotanical properties of the plants. The purpose of this study is to determine the local and Latin names, the parts used, forms and purposes of utilization of the plants used by local people in Kars province.

## 2. Materials and methods

The study is executed in March-October in the years of 2007-2009, the seasons when the plants are in bloom and fruit bearing in Kars and surrounding villages. Kars is located in Northeast of East Anatolia region of Turkey. Surface area is 9,442 km<sup>2</sup> and population is 312,205 (according to the address-based census of 2007). There are 7 towns, 10 municipalities and 384 villages within the limits of Kars Province. The elevation of Kars from sea level is approximately 2000 m and a vast majority of the land consists of plateaus and upland meadows. The most outstanding heights of this province are Allahuekber Mountains, Kısır Mountain, Akbaba Mountain, Aladağ Mountain and Aşağı Mountain. Aras and Arpaçay rivers are running through the lands of the province and flowing into Caspian Sea. The highest temperature throughout the year is 35.4 °C, and the lowest -33.1 °C. Kars mainly has a continental climate. Winters are dry and summers are rainy, the temperature drops to -39 °C in winter (<http://tr.wikipedia.org/wiki/Kars>). The snow-covered days of the year are more than 120. The main difference of this province comparing with the other eastern provinces is that summer is the rainiest season. Natural vegetation is steppe because of the severe climate conditions. The forests are spreading to the heights of the mountains. Sarıkamış Forests are examples of that. Çıldır Lake, Allahuekber Mountains and Sarıkamış Forests are the important vegetation areas specified within the province limits (Özhatay et al., 2003). The high lands covered with upland meadows lead the local community to the custom of transhumance. This old tradition is still carried on. Transhumance and the rich variety of the plants caused the local people being more familiar with the plants and they used the plants even to cure animals. In addition, as result of very cold, snowy and long winters, some persons known as traditional healers emerged in every village.

In this study, 33 villages of Kars were visited and interviews were performed with 33 persons in total. The ages, gender, occupation, educational level and location numbers of the interviewees were shown in Table 1. The identification of the plant species those determined to be in use was based on “Flora of Turkey and East Aegean Islands” (Davis, 1965-1985; 1988; Güner et al., 2000). The plant samples identified are kept in Kafkas University, Faculty of Science and Letters, Biology Department.

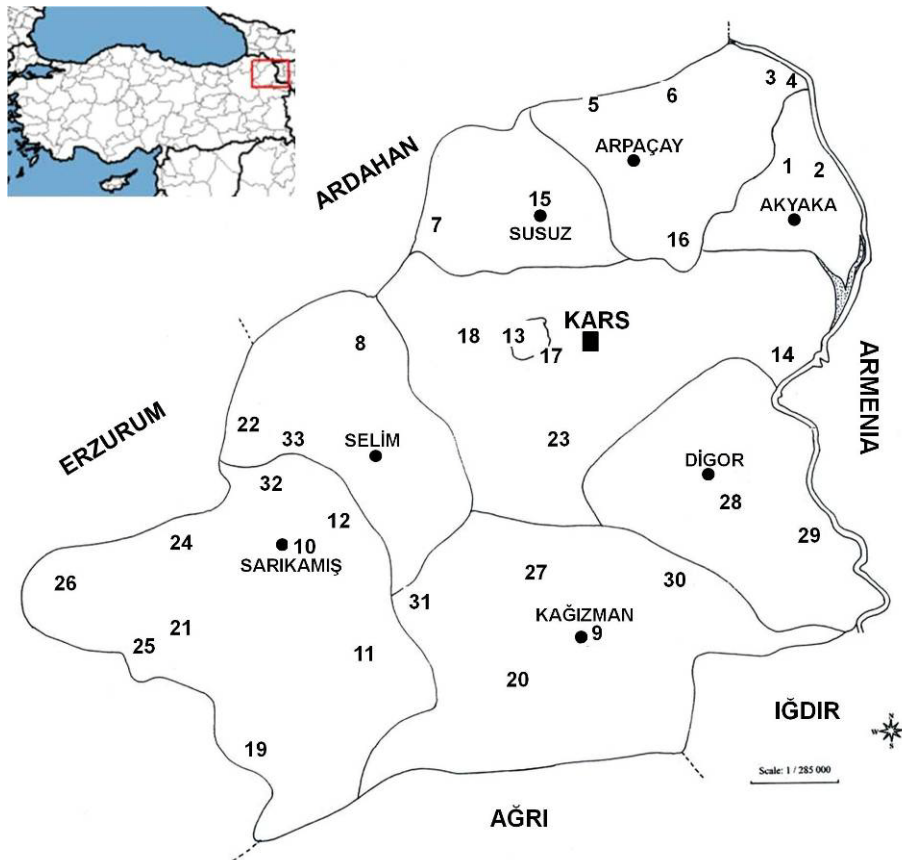


Figure 1. The Map of Kars Province, Location in Turkey and the numbers of the villages where the study was performed (The numbers representing each village was shown in Table 1).

Table 1. The features of the people participated in the study and their residences

Age	Gender	Occupation	Educational qualification	Date	Name of the village	Location Number
72	Woman	House wife	Non literate	26.06.2006	Sulakbahçe	1
62	Woman	House wife	Literate	17.07.2006	Yerlikavak	2
75	Men	Retired	Primary school	23.07.2006	İbiş	3
69	Woman	House wife	Literate	24.07.2006	Kayadöven	4
70	Woman	House wife	Primary school	27.07.2006	Bozyiğit	5
58	Woman	House wife	Non literate	26.05.2007 19.09.2007	Aydingün	6
49	Woman	House wife	Primary school	01.06.2007	Boğatepe	7
74	Woman	House wife	Non literate	02.06.2007	Tuygun	8
70	Woman	House wife	Non literate	03.06.2007	Kağızman	9
75	Woman	House wife	Non literate	15.07.2007	Sarıkamış	10
54	Woman	House wife	Primary school	10.06.2007 09.10.2007	Akkaz plateau	11
68	Woman	House wife	Non literate	27.07.2007	Bozat	12
62	Woman	House wife	Non literate	20.10.2007	Kars	13
59	Woman	House wife	Primary school	09.08.2007	Ataköy	14
56	Men	Farmer	High school	12.10.2007	Susuz	15
70	Woman	House wife	Middle school	16.03.2008 29.07.2008	Kuyucuk	16
62	Woman	House wife	Primary school	13.04.2008 01.09.2008	Kars (Merkez)	17
52	Woman	House wife	Middle school	26.05.2008 17.08.2008	Paşaçayırı	18
61	Woman	House wife	Primary school	05.04.2008 11.08.2008	Eşmeçayır	19
62	Men	Retired	High school	06.03.2008 18.07.2008	Esenkır	20
60	Woman	Biyolog	University	22.05.2008 05.09.2008	Çamyazı	21
79	Woman	House wife	Non literate	28.05.2008 08.10.2008	Başköy	22
68	Woman	House wife	Non literate	24.05.2008	Kars (Merkez)	23
62	Woman	House wife	Non literate	21.04.2008 08.08.2008	Koroğlu	24
84	Woman	House wife	Non literate	08.08.2008	Altınbulak	25
23	Men	Teacher	University	08.08.2008	Parmaklıdere	26
65	Woman	House wife	Non literate	05.05.2008	Böcükli	27
95	Woman	House wife	Non literate	09.08.2008		
47	Woman	House wife	Literate	10.08.2008	Digor	28
57	Woman	House wife	Non literate	10.08.2008	Düzgeçit plateau	29
58	Men	Mukhtar	Primary school	19.09.2008	Yavuzlar	30
92	Woman	House wife	Non literate	20.09.2008	Kağızman	31
75	Woman	House wife	Primary school	20.09.2008	Gürbüzler	32
76	Men	Retired	Primary school	20.09.2008	Çıplaklı	33

### 3. Results

The height of Kars, the area of study and its vicinity is changing from 800 m (Kağızman) to 2500 m (Tuygun, İbiş). The varieties of plants are substantially abundant because of the transitional zone located between Euro-Siberian and Iran-Turan phytogeographical regions. In Kars province and its vicinity, 95 taxa included in 32 families, which are

actually used by the community, were specified in this study and the results obtained were shown in Tables 2, 3 and 4. The herbarium numbers of the plants were shown under their Latin names.

Table 2. Plant used as a food in Kars province

Species and Family	Voucher number	Local name	Village number	Part used	Usage form	References (Akgül, )
<i>Alliaria petiolata</i> (M. Bieb.) Cavara & Grande (Cruciferae)	868	Dida	21	Stems	Cooked	-----
<i>Allium dictyoprasum</i> C. A. Mey. Ex Kunth (Liliceae)	546,892	Sirmo	11,23	Stems Bulbs	Fresh	-----
<i>Amaranthus retrosa</i> L. (Amarantaceae)	188,234,522, 537,571, 873	Unluca Pancar	1,4,5,8, 9, 14,22	Leaves Stems	Roasted, Salad, Fresh	-----
<i>Artemisia absinthium</i> L. (Compositae)	588	Süpürge Otu	15	Stems	Fresh	-----
<i>Astragalus cicer</i> L. (Leguminosae)	882	Yonca	22	Flowers	Fresh	Kara yonca Feed animals
<i>Anthriscus cerefolium</i> (L.) Hoffm. (Umbelliferae)	189, 209,233,511,523, 536,589,881	Kımı	1,2,4,6,8,9, 15, 22	All plant parts	Make soup	-----
<i>Bellevalia sarmatica</i> (Pall. Ex Georgi) Woronow (Liliaceae)	547,833	Kır Çiçeği	11,18	Bulbs, Flowers	Fresh	-----
<i>Capsella bursa-pastoris</i> (L.) Medic (Cruciferae)	832,858	Acıgıcı	18,20	Stems	Fresh	Stems Fresh
<i>Caltha polypetalata</i> Hochst. (Ranunculaceae)	190, 208,232,534	Lilipar, Bizbizik	1,2,4, 9	All plant parts	Roasted, Soup	Mayıs çiçeği, All plant parts, Cooked
<i>Cholcicum szovitsii</i> Fisch. et Mey. (Liliaceae)	215,524,533, 1058	Kardelen	5,8,9, 30	Bulbs	Fresh (Children)	İmambaşı Bulbs Fresh
<i>Chenopodium album</i> L. (Chenopodiaceae)	538, 817,880	Kazayağı	10,16, 18, 22	All plant parts	Pickle & Cooked	Fruits Fresh
<i>Crataegus pontica</i> K.Koch (Rosaceae)	570	Risok	14	Fruits	Fresh	-----
<i>Echinops pungens</i> Trautv. var. <i>pungens</i> (Compositae)	996	Topuz	25	Flowers	Fresh	Flowers Fresh
<i>Eryngium billardieri</i> Del. (Umbelliferae)	557,831	Su Dikeni	12,18	Stems	Fresh	-----
<i>Ferula orientalis</i> L. (Umbelliferae)	218,231,525,1004,1078	Çakşır (Çaşır)	3,4,8,25, 33	Leaves Stems	Make Spices and Pickle, Fresh	-----
<i>Heracleum antiasiaticum</i> Manden. (Umbelliferae)	516,830	Kangal	7,18	Stems	Stems	-----
<i>Heracleum pastinacifolium</i> C. Koch. (Umbelliferae)	869,879	Kabalak, Devetabanı	21,22	Roods	Fresh	-----
<i>Heracleum trachyloma</i> L. (Umbelliferae)	229-B	Keküre	5	Stems	Fresh, Make Pickle	-----

Table 2. (devam)

<i>Lathyrus rotundifolius</i> subsp. <i>miniatus</i> (Bieb. Ex Stev.) Davis (Leguminosae)	219	Hatun Parmağı	3,5	Leaves Stems	Fresh	Keçi memesi Leaves Stems Fresh
<i>Lathyrus tuberosus</i> L. (Leguminosae)	191,539,558,816	Koş Koz	1,10,12,16	Tubers	Fruits, Robbed Fruits	-----
<i>Lepidium vesicarium</i> L. (Cruciferae)	239-A	Patpatık	5	Seeds	Infusion	-----
<i>Malabaila dasyantha</i> (C. Koch) Grossh (Umbelliferae)	192,207,230,532,540,814	Kelemen Keçir	1,2,4,9,10,16	Leaves Stems	Roasted ,Make Soup and Pickle	-----
<i>Malva neglecta</i> Wallr. (Malvaceae)	556,844,857,878,897,1005,1015,1032,1035,1056,1060,1072	Ebem Kümeci, Dolluk, Düye Tabanı	12,19,20,22,24,25,26,27,28,30,31,32	Leaves	Cooked or Fresh	Gortgort, Gorgodan Leaves Fresh or maka soup Leaves salad
<i>Mentha longifolia</i> L. subsp. <i>longifolia</i> (Labiatae)	206,220,877,1008	Yarpuz	2,3,22,25	Leaves Stems	Dried and Make Spices or salad	-----
<i>Papaver orientale</i> L. (Papaveraceae)	512,816,1011	Haşhaş	6,16,26	Seeds	Seeds	-----
<i>Pastinaca armena</i> Fisch. & Mey (Umbelliferae)	856	Kelemen-keşir	20	Stems	Fresh	-----
<i>Plantago major</i> L. (Plantaginaceae)	193,205,513,896,1064	Bağ Yapağı, Pelhavis	1,2,5,6,24,31	Leaves	Cooked	-----
<i>Polygonum bistorta</i> L. (Polygonaceae)	221,569	Çayır Eveleği	3,14,17,	Flowers Stems	Dried and Make Soup, Decoction	-----
<i>Polygonum cognatum</i> Maissn. (Polygonaceae)	194,204,222,229,845,870,876,1034,1079	Madımak, Kuş Ekmeği	1,2,3,4,19,21,22,27,33	All plant parts	Roasted , Soup and Salad, Fresh	Soup and Salad Fresh
<i>Potentilla anserina</i> L. (Rosaceae)	903	Aslan Kecesi	25	All plant parts	Cooked	-----
<i>Ranunculus caucasicus</i> Bieb. (Ranunculaceae)	195,203,223,815	Mayıs Çiçeği	1,3,5,16	Flowers	Soup, Jam, Dried and Make Spices	-----
<i>Rheum ribes</i> L. (Polygonaceae)	531,568,1055	Işgın	9,14,30	Stems	Fresh, Root Boiling	-----
<i>Rosa pimpinellifolia</i> L. (Rosaceae)	224,567,871,875	Siyah Kuş Burnu	3,14,18,21,22	Fruits	Jam and Decoction	Fruits Fresh
<i>Rubus caesius</i> L. (Rosaceae)	1051	Böğürtlen	29	Fruits	Tea and Fresh	-----
<i>Rumex crispus</i> L. (Polygonaceae)	202,560,566,1010	Kuzu Kulağı Dırşo	2,13,26,	Leaves Stems	Fresh	-----
<i>Rumex patientia</i> L. (Polygonaceae)	196,201,872,895,1057	Evelik	1,2,21,24,27,30	Leaves	Roasted, Soup, Fresh	Leaves Roasted, Soup, Fresh
<i>Salvia ceratopylla</i> L. (Labiatae)	814,829	Öküz Pöçüğü	16,18	Stems	Fresh	-----
<i>Sedum telephium</i> L. (Crassulaceae)	225	Çamış Kulağı	2,3	Leaves	Fresh	-----
<i>Sinapis arvensis</i> L. (Cruciferae)	541,559	Hardal Otu	10,12	Stems	Fresh	-----
<i>Taraxacum bessarabicum</i> (Hornem.) Hand.-Mazz. (Compositae)	1009	Şirtalık	26	Leaves Stems	Salad and Fresh	-----

Table 2. (devam)

<i>Tragopogon pratensis</i> L. (Compositae)	197,200,226,85 5,873	Yemlik	1,2,3,5,20, 21	All plant parts	Fresh, Pickle	-----
<i>Trifolium ocreleucum</i> Huds. (Leguminosae)	247-A,567	Tut	5,13	Flowers	Fresh	-----
<i>Tragopogon buphtalmoides</i> (Dc.) Boiss. (Compositae)	542	Mırcalık	10	Roods	Fresh	-----
<i>Urtica dioica</i> L. (Urticaceae)	198,199,227,22 8,515, 846,526,530,87 4	Isırgan	1,2,3,4,7,8 9,19,21	Leaves Stems	Roasted , Soup	Cincar Leaves Stems Roasted , Soup
<i>Vicia canescens</i> Lab. (Leguminosae)	828	Küllür	18	Fruits	Fresh	

**Village numbers:** 1. Sulakbahçe, 2. Yerlikavak, 3. İbiş, 4. Kayadöven, 5. Bozyiğit, 6. Aydingün, 7. Boğatepe, 8. Tuygun, 9. Kağızman, 10. Sarıkamış, 11. Akkaz plateau, 12. Bozat, 13. Kars, 14. Ataköy, 15. Susuz, 16. Kuyucuk, 17. Kars (Merkez), 18. Paşaçayırı, 19. Eşmeçayırı, 20. Kağızman, 21. Sarıkamış, 22. Göbelbakan, 23. Kars (Merkez), 24. Köroğlu, 25. Altınbulak, 26. Parmaklıdere, 27. Böcükü, 28. Digor, 29. Düzgeçit plateau, 30. Yavuzlar, 31. Kağızman, 32. Gürbüzler, 33. Çıplaklı.

Table 3. Plants used for medicinal propose in Kars province

Plant botanical name (Families)	Voucher number	Local name	Village number	Part used	Usage form	Uses	References (Akgül, )
<i>Ajuga orientalis</i> L. (Labiatae)	1042, 1080	Mayasıl otu	29,33	All parts	Dried and Decoction	Hemorrhoids	-----
<i>Achillea millefolium</i> L. subsp. <i>millefolium</i> (Compositae)	854,890	Hıpkesti	20,23	All parts	Decoction	Toothache and pains	Hıpkesti Flowers Decoction Stomachache,
<i>Ajuga orientalis</i> L. with <i>Mentha longifolium</i> L. subsp. <i>longifolium</i> (Labiatae)	212,246, 247,566, 587, 898,1082	Mayasıl otu and Yarpuz	1,2,4,5, 13,24,33	Flowers stems	Decoction with	Hemorrhoids, pains, bloody, eczema	-----
<i>Alcea hoheneckeri</i> (Boiss. et Huet.) Boiss (Malvaceae)	245, 551, 994	Gül hatmi, Hiro	4,11,25	Leaves Flowers	Decoction with milk	uretic, kidneyache	-----
<i>Alliaria petiolata</i> (M. Bieb.) Cavara & Grande (Cruciferae)	861-B	Dida	21	Stems	Decoction	Tension	-----
<i>Amaranthus retrosus</i> L. (Amarathaceae)	544,823, 888	Unluca	10,17, 22	Leaves	Decoction	Hepatitis and inflammation	-----
<i>Anemone albana</i> Stev. subsp. <i>armena</i> (Ranunculaceae)	244	Sinüzit otu	4	Base leaves	Leaves grounds and extracts	Headache & sinusitis	-----
<i>Anethum graveolens</i> L. (Umbelliferae)	179	Dere otu	1	All parts, seeds	Decoction	Gastritis, hemorrhoids & stomach disease	-----
<i>Artemisia absinthium</i> L. (Compositae)	586, 897,1023	Yavşan mide otu	4,15,24, 26	Leaves, stems	Decoction	Diabetes, Stomachache, Inflammation.	Parlakot, bitotu Leaves, stems Asthma
<i>Anthemis cotula</i> L. (Compositae)	213,243,5 52,995,10 21,1026,1 075	Papatya	4,3,11,252 6,27,32	Stems leaves flowers	Decoction	Cold, cough & Diuretic Intestineache, Diabetes,	-----
<i>Astragalus fragrans</i> Willd. (Leguminosae)	180	Geven	1	Leaves roots	Decoction with honey	Stomach inflation, tension, pain stopper,	-----

Table 3. (devam)

<i>Astragalus micr ocephalus</i> Willd. (Leguminosae)	838	Geven	18	Stems	Plant's oil make cream for lessions	Dermoy in animals	in	-----
<i>Carduus adpressus</i> C.A.Mey. (Compositae)	1019	Deve dikeneni	26	Flowers	Dried flowers	a kind of ringworm Prevents hair loss.		-----
<i>Caltha polypetala</i> Hochst. (Ranunculaceae)	242, 584,853, 861	Lilipar	4,15, 20, 21	Flowers	Make soup or Decoction	Internal organs hemorrhoids, Lung disease,		-----
<i>Centaurea depressa</i> Bieb. (Compositae)	517	Oğul otu	7	Leaves	Decoction	cardiac, Asthma, expectoration		-----
<i>Cephalaria gigantea</i> (Ledeb.) Bobrov (Dipsacaceae)	241,1082	Kanteper	4,33	Flowers	Decoction	Cold, uretic, menstruation regulator, Rheumatism, lung diseases, cardiac diseases		-----
■ <i>Cucurbita pepo</i> L. (Cucurbitaceae)	852	Kabak	20	Stalk	The stem is burned, its ash rubbed on the diseased part, waited to dry.	Dermoy		-----
■ <i>Cerasus vulgaris</i> (L.) Mil (Rosaceae)	570-B	Vişne Sapı	14	Fruit stalk	Infusion	Kidney stones, Diuretic		-----
<i>Eryngium billardieri</i> Del. (Umbelliferae)	837	Su dikeneni	18	Stems	Eaten	Kidneyache		-----
<i>Euphorbia m acroclada</i> Boiss. (Euphorbiaceae)	996	Şırtalık	25	Stems	Stems extract	Wounds	Sütlüce Plant Toothache	
<i>Ferula orientalis</i> L. (Umbelliferae)	572,813, 843,999	Çakşır, Çeççir	14,16, 19, 25	All plants	Cook in boiling water and eaten, infusion	Diabetes tension	and	-----
<i>Filipendula vulgaris</i> Moench. (Rosaceae)	181	Emen kömenci	1	Leaves	Decoction, extacts make dough for lessions	Lesions, carbuncle, discharge		-----
<i>Fumaria officinalis</i> L. (Fumariaceae)	862	Şahtere	21	All parts	Boil the plant and drink its water or sat on it.	Hemorrhoids		-----
<i>Gentiana gelida</i> Bieb (Gentianaceae)	998	No name	25	Stems Flowers	Dried and Decoction	Bronchitis, uretic		-----
<i>Helichrysum a renarium</i> (L.) Moench subsp. <i>rubicundum</i> (Compositae)	518	Altın otu	7	Flowers Leaves Stems	Decoction	Diuretic		-----
<i>Helianthus tuberosum</i> L. (Compositae)	573	Yer elması	14	Stems	Fresh	Diabetes		-----

Table 3. (devam)

<i>Helichrysum plicatum</i> DC. subsp. <i>plicatum</i> (Compositae)	851,1000	Ölmez sarıçiçek	20,25	All parts	Decoction	Rheumatism, jaundice, clean intestine	Yayla çiçeği, sarı çiçek, flowers Decoction kidney disease
<i>Heracleum trachylooma</i> Fisch. et Mey (Umbelliferae)	248	Keküre	5	Stems	eat fresh, make pickle	Stomach disease	-----
<i>Heracleum pastinacifolium</i> C Koch subsp. <i>transcaucasicum</i> (Manden.) PH Davis (Umbelliferae)	574,889	Kabalak	14,22	Leaves	Wrapping	Rheumatism	-----
<i>Hypericum perforatum</i> L. (Guttiferae)	1027,1038	Gevrik, kamtoran	27,28	All parts	Fresh, Decoction	Hemostatic, pains and stomachache,	-----
<i>Hyoscyamus niger</i> L. (Solanaceae)	1043,1072	Deli patpat	29,32	Roods	Fresh	Inflammation	Leaves Rheumatism
<i>Juniperus oxycedrus</i> L. (Cupressaceae)	182,1045	Ardıç	1,29	Fruits	Decoction with <i>Urtica</i> sp. & <i>Petroselinum</i> <i>crispum</i>	Rheumatism, constipation	-----
<i>Lathyrus tuberosus</i> L. (Leguminosae)	583	Koşkoz	15	Leaves	Cook as a meal	Diabetes	-----
<i>Lepidium vesicarium</i> L. (Cruciferae)	565,1044	Patpatık	13,29	All parts	Decoction	kidney and liver disease	-----
<i>Malva neglecta</i> Wallr. (Malvaceae)	240, 824,836, 850,893, 997,1020, 1030,1061 ,1071	Ebem kömenci, Dolluk, toltolik	4,17,18, 20,24,25,2 6,27,31,32	Stems Leaves seeds	Decoction or with <i>Plantago</i> major leaves	Gastritis & stomach disease, Hemorrhoids Tonsillitis, kidney, burn, pain	-----
<i>Malva neglecta</i> Wallr. (Malvaceae)	575	Düye tabanı	14	Leaves	Fresh leaves wrapping	Rheumatism	Asthma, cardiac diseases
<i>Marrubium catarifolium</i> Desr. (Labiatae)	528	Boz ot – acı ot	9,30	All parts	Decoction	Kidney & menstruation regulator	-----
<i>Melilotus officinalis</i> (L.) Lam. (Leguminosae)	887	Kaymak çiçeği	22	Leaves Stems Flowers	Decoction drink a glass once a day.	Kidney stones	-----
<i>Mentha longifolia</i> L. Ssp. <i>longifolia</i> (Labiatae)	239,886, 1018	Yarpuz, yarbuz, punk	4,22,26	Leaves Stems	Infusion with <i>Camelia</i> <i>sinensis</i> , have bath, dried	Asthma, stomach disease, Hemorrhoids	Leaves Stems for Cold
<i>Morchella esculenta</i> (L.) Pers. (Morchellaceae)	550	İlaç mantarı	11	All parts	Fresh or dried	To control immunity	-----
<i>Papaver orientale</i> L. (Papaveraceae)	582,1013	Haşhaş tohumu	15,26	Seeds Leaves, stems	Seeds roast with allium and rushed sourcherry, drink before meal.	Cold and ache	-----



Table 3. (devam)

<i>Pinus sylvestris</i> L. (Pinaceae)	183	Çam	1	Coat Leaves cone	Decoction, make cream	Toothache, lessions, gastritis, expectoration	-----
<i>Plantago major</i> L. (Plantaginaceae)	510,576, 825,843, 849,863,8 96,1029, 1054, 1062	Bağ yaprağı, pelhavis	6,14,17, 19,20,21, 24,27,30, 31,	All parts	Decoction with sugar and Fresh Put leaves above wounds	Stomachache and toothache inflammation, hemostatic	Leaves Put fresh leaves above wounds
<i>Polygonum bistorta</i> L. (Polygonaceae)	214,564, 864,885, 1029	Kuş ekmeği, Çayır eveleği,	3,13,21, 22,27	Flowers Stems	Dried and make soap, decoction	Stomachache, discharge, tension, inflammation	-----
<i>Potentilla anserina</i> L. (Rosaceae)	1001,1047	Aslan kecesi	25,29	All parts	Decoction	Headache & migren	-----
<i>Ranunculus c aucasicus</i> Bieb. ( Ranunculaceae)	249	Sarı çiçek	5	Aerial parts	Fresh leaves	Rheumatism, burn, blain	-----
<i>Rheum ribes</i> L. (Polygonaceae)	529,549, 826	Işgın, Rıbis	9,11,17	Stems Roots	Eat fresh, root boiling	Diabetes, kolesterol, kidney and Stomach disease	-----
<i>Rosa canina</i> L. (Rosaceae)	184,835, 892,1046	Kuş burnu, gelin göbeği	1,18,24, 29	Roots Leaves Stems Fruits	Infusion	Cold and cough, Asthma, intestineache	Fruits make Jam, Gastritis & stomach disease
<i>Rosa pimpinellifolia</i> L. ( Rosaceae)	215,577	Siyah kuş burnu	3,14	Fruits	Jam and decoction	Bellyache, cold.	Decoction Cold and cough,
<i>Rubus caesius</i> L. (Rosaceae)	1049	Böğürtlen	29	Leaves Flowers	Infusion	Antiooxidant	-----
<i>Rumex patientia</i> L. (Polygonaceae)	211,216, 518,521, 555,834, 884,891	Evelek, evelik	2,3,7,8, 12,18,22,2 4	Leaves	Decoction and make soup	Cold, tonsillitis, cough inflammation	Decoction İntestineache, Stomachach
<i>Salvia virgata</i> Jacq. (Labiatae)	1052,1064	Yaban çayı	30,31	Leaves Stems	Infusion	Cardiac diseases	-----
<i>Salvia staminea</i> Montbr. & Auch. (Labiatae)	900	No name	24	All parts	Dried	In new born baby, spread on wounds	-----
<i>Scrophularia c hrysantha</i> Jaub. et Spach. (Scrophulariaceae)	903	Bebek otu	24	All parts	Dried and Decoction with cold water	Baby inflammation	-----
<i>Scutellaria orientalis</i> L. (Labiatae)	1065	Majark	31	All parts	Decoction	Throw out intestine worms in animals	-----
<i>Sinapis arvensis</i> L. (Cruciferae)	185	Hardal	1	Flowers Stems	Decoction, dried and make flour for lessions	Headache, tootache, rheumatism	-----
<i>Tanacetum ch iliophyllum</i> (Fisch. et C. A. Mey) Sch. Bip. (Compositae)	238,563	Bronşit otu	4,13	All parts	Decoction with drink one glass of it every morning and evening	Lung disease, discharge, cold and bronchitis	-----

Table 3. (devam)

<i>Tanacetum balsamita</i> L. (Compositae)	237,821, 865,899, 1017, 1039, 1083	Kılıç Bozboz	otu,	4,16,21, 24,26, 28, 33	Leaves Stems Fresh	Decoction	Deep lesions treatment, cream for Rheumatism, dried and with oil make cream for lessions Menstruation regulator Sterility (woman)	-----
<i>Tanacetum coccineum</i> (Willd.) Grierson subsp. <i>chamaemelifolium</i> (Somm. et Lev.) Grierson. (Compositae)	519, 1014	Sendel		8,26	Leaves, Flowers, Stems	Decoction		-----
<i>Taraxacum macrolepium</i> Schischkin (Compositae)	186	Karahindiba		1	Roots Leaves	Decoction	Diabetes, kidney stones, hepatitis	-----
<i>Teucrium polium</i> L. (Labiatae)	898, 1063	Mervende		24,31	All parts	Infusion	Heart, Rheumatism	-----
<i>Thalictrum minus</i> L. (Ranunculaceae)	250	Astim otu		5	Leaves Stems	Boiling and vapour inhalation	Asthma	-----
<i>Thymus transcaucasicus</i> Ronniger (Labiatae)	217,562, 821,891, 1003, 1053, 1070	Kek otu, catıra		3,13, 16, 18,23, 25, 30,32,	All parts	Infusion	Hypertension, cold and kidney disease, stomachache, Rheumatism and Eczema, uretic Functions large intestine.	All parts stomachache
<i>Tragopogon aureus</i> Boiss. (Compositae)	210,820, 1014	Yemlik, spink		2,16, 26	All parts	Fresh	Worms in intestine	All parts Fresh
<i>Tragopogon bulbophthalmoides</i> (DC.) Boiss. var. <i>latifolius</i> Boiss. (Compositae)	844	Sıpink		19	Stems	Fresh	Clean blood, hematic,	-----
<i>Trifolium ochroleucum</i> Huds. (Leguminosae)	236	At elması		4	Flowers Leaves Stems	Decoction	Constipation	-----
<i>Urtica dioica</i> L. (Urticaceae)	235, 543,561, 819,866, 1036, 1066, 1069	Isırgan,		1,4,10, 13,16, 21,28, 31,32	Leaves Stems seeds	Decoction	Prevent cancer bronchitis, Asthma, Ulcers, Diabetes, cough, Rheumatism, expectoration, tension, and osteoporosis	All parts, Rheumatism
<i>Urtica urens</i> L. (Urticaceae)	1068	Gezgezuk		31	All parts seeds	Dried	Prevents hair loss. inflammation	-----
<i>Urtica dioica</i> L. & <i>Plantago major</i> L. (Urticaceae & Plantaginaceae)	867	Isırgan ve bağ yaprağı		21	All parts	Decoction	If use regularly prevent from cancer	-----
<i>Verbascum didymum</i> (Hub.-Mor.) Hub.-Mor. (Scrophulariaceae)	187, 1031	Sığır kuyruğu		1,27	Flowers Leaves	Decoction with sugar	Expectoration, discharge, apse, Hemorrhoids, guatr	-----
<i>Zea mays</i> L. (Graminae)	578,818	Mısır		1,7, 14, 16	Pistils	Decoction	Rheumatism, Prostate, cough, stomachache, uretic & headache	-----

Cultivated plant

**Villages numbers:** 1. Sulakbahçe, 2. Yerlikavak, 3. İbiş, 4. Kayadöven, 5. Bozyiğit, 6. Aydingün, 7. Boğatepe, 8. Tuygun, 9. Kağızman, 10. Sarıkamış, 11. Akkaz plateau, 12. Bozat, 13. Kars, 14. Ataköy, 15. Susuz, 16. Kuyucuk, 17. Kars (Merkez), 18. Paşaçayırı, 19. Eşmeçayır, 20. Kağızman, 21. Sarıkamış, 22. Göbelbakan, 23. Kars (Merkez), 24. Köroğlu, 25. Altınbulak, 26. Parmaklıdere, 27. Böcükli, 28. Digor, 29. Düzgeçit plateau, 30. Yavuzlar, 31. Kağızman, 32. Gürbüzler, 33. Çıplaklı.

Table 4. Plant used as different purpose in Kars province

Plant botanical name (Families)	Voucher number	Local name	Village number	Part used	Usage form	Uses	References
<i>Aconitum n. asutum</i> Fisch et Rchb. (Ranunculaceae)	554,581	Balık kıran	12,15	All parts	The plant bound to a stick is plunged to the water and the fish pass out.	Catching fish	-----
<i>Artemisia absinthium</i> L. (Compositae)	839,860, 1024	Süpürge otu	18,21, 26	All parts	Hang up as bouquet	To make broom and for flea	Yavşan For insect
<i>Astragalus angustifolius</i> Lam. (Leguminosae)	840,847, 1041	Geven	18,19,29	All parts	Dried	For heating	-----
<i>Juncus effusus</i> L. (Juncaceae)	545,1068	Hasır cili	10,31	Stems and leaves	Plaited.	Rush mat	-----
<i>Malva neglecta</i> Wallr. (Malvaceae)	580,812, 842	Ebe kümecı	14,16,19	All parts	Burn	For protect the evil eye against	-----
<i>Melilotus officinalis</i> L. (Leguminosae)	527,890	Kaymak çiçeği	8,22	All parts	Feed (for animals)	For more milk	-----
<i>Peganum harmala</i> L. (Zygophyllaceae)	993,1051	Üzelik	25,30	Flowers Leaves Fruits	Hang up in home	For protect the evil eye against	-----
<i>Pinus sylvestris</i> L. (Pinaceae)	552,1040	Kozalak	11,29	cones	Paint	Ornamental display	-----
<i>Rosa canina</i> L. (Rosaceae)	841	Gül tonik	18	Flowers	One spoonful of rose petals are added to 1 liter of water kept waiting for 1 month and used every morning.	Clean skin	-----
<i>Vicia sativa</i> (Leguminosae)	579,822,1 084	Yonca	14,17,33	All parts	For young goose	Feed	-----

**Villages numbers:** 8. Tuygun, 10. Sarıkamış, 11. Akkaz plateau, 12. Bozat, 14. Ataköy, 15. Susuz, 16. Kuyucuk, 17. Kars (Merkez), 18. Paşaçayırı, 19. Eşmeçayırı, 21. Sarıkamış, 22. Göbelbakan, 25. Altınbulak, 26. Parmaklıdere, 29. Düzgeçit plateau, 30. Yavuzlar, 31. Kağızman, 33. Çıplaklı.

#### 4. Conclusions and discussion

As result of this study, it was specified that 95 taxa of plants including in 32 families be in use. According to the determinations, 71 of these utilized taxa were used for medical, 46 taxa for food and 10 taxa for different purposes. The examples of the plant species most widely used for medical purposes are *Anthemis c. otula*, *Malva neglecta*, *Plantago major*, *Polygonum bistorta*, *Tanacetum balsamita*, *Thymus transcaucasica*, *Urtica dioica* and *Rumex patientia*. *Malva neglecta*, *Plantago major*, *Polygonum cognatum*, *Rumex patientia*, *Tragopogon pratensis* and *Urtica dioica* species are the most commonly used plant taxa as food. *Rheum ribes* (Işgın, ribes, muz), a plant also used as food is gathered and sold in local markets by the community.

The number of taxa used for food is 46 and are consumed like; 28 of them as fresh, 7 roasted, 6 for soup, 3 for pickles and 2 for jam. The plants used as food and used parts are shown in Table 2 alphabetically. The number of plant taxa used for medical purposes is 71 and 15 of them are used to cure kidney disorders, 12 for stomach problems, 11 for rheumatism and as pain reliever, 8 for diabetes, 7 for hemorrhoids and 6 for high blood pressure. The applications determined were listed in Table 3 alphabetically according to the scientific names of the plants.

The study was compared with the other researches performed around Kars previously. Akgül (2008), determined the local names and ethnobotanic properties of the 65 species included in 28 families utilized by the community in Çıldır and vicinity. The study denoted that 25 of these plants are used for medical purposes, 24 for food and others for various purposes. Although the local name and purpose of use of many plants are similar to the results of our study, the local names and utilization purposes are different. For example, while "sarı çiçek" is *Helichrysum*

*plicatum* in Çıldır and vicinity, is *Ranunculus caucasicus* in Kars. While *Artemisia absinthium* (Yavşan, Parlakot, Bitotu) is used as pesticide and inhaler, in our study the name of this plant is “süpürgeotu” and used for diabetes, stomach problems and infectious diseases. Although Kars and Çıldır are two very close regions, the reason of these variations is the local language used in Kars and vicinity and different cultures around.

As emphasized by the previous researchers, it was observed that some poisonous plants are consumed as food for local people in this region also. (Seziket al., 1992; Türkan et al., 2006; Kültür, 2007; 2008). *Caltha polypetala* is an example of these (Table 2).

In conclusion, 95 plants included in 32 families were identified and the applications are determined as 46 for food, 71 for drug and 10 taxa for different purposes. The number of the plants used for all purposes as food, drug and the other is 31.

The requirement that local community should be enlightened by using scientific methods about identifying our plant richness and the necessity to make better use of them is clear. During the field studies of this research; information, methods, advice and explanation was given to the local community.

With this study, we believe that we will contribute to future studies regarding the use of plants with high economical and biological value in botany, pharmaceuticals, medicine, food etc. and also to helping our biological richness be known and be protected more.

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