



An ethnobotanical survey from Hayrat (Trabzon) and Kalkandere (Rize/Turkey)

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Abstract

In this study, Hayrat (Trabzon)-Kalkandere (Rize) and surrounding area ethnobotanical properties were investigated. Field studies were carried out in research area in June-August 14 different areas (2010). At the end of the field studies, 101 taxa included in 49 families were identified. The utilization of the plants was divided into three categories; as drug, food and for other purposes. Also, the scientific names of the plants, local names, families, usable parts and forms of utilization were listed alphabetically in the tables. It is found that *Myosotis lazica*, *Stellaria media* and *Sedum spurium* taxa were used for medical purposes first time.

Key words: Ethnobotany, Hayrat (Trabzon), Kalkandere (Rize), Turkey

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Hayrat (Trabzon) ve Kalkandere (Rize) 'den etnobotanik bir araştırma

Özet

Bu çalışmada Hayrat (Trabzon)-Kalkandere (Rize) ve çevresinin etnobotanik özellikleri araştırılmıştır. Araştırma alanında Haziran-Ağustos (2010) aylarında 14 ayrı yerleşim yerinde arazi çalışmaları yapılmıştır. Bu araştırmalar sonucunda 49 familyaya ait 101 takson tespit edilmiştir. Bitkiler ilaç, yiyecek ve diğer amaçlar olmak üzere üç ayrı kategoride toplanmıştır. Ayrıca tablolarda bitkilerin bilimsel ve yöresel adları, familyaları, kullanılan kısımları ve kullanım şekilleri alfabetik olarak verilmiştir. *Myosotis lazica*, *Stellaria media* ve *Sedum spurium* taksonlarının Türkiyede tıbbi amaçlı olarak kullanıldığı ilk kez tespit edildi.

Anahtar kelimeler: Etnobotanik, Hayrat (Trabzon), Kalkandere (Rize), Türkiye

1. Introduction

The term ethnobotany can be summarized as ‘ people living in the vicinity of a region to exploit information to meet the various needs of plants and the effect on plants’(Yıldırım, 2004). Turkey has a quite rich flora with approximately 11.000 plants. Local people use the rich flora for different purposes. Recently, the studies performed utilization of the plants for different purposes in Turkey. We see from this studies, nearly 500 plants are used for medicinal purposes (Güneş, 2011). In this study, usage form of 101 plants by the community and local names of plants were investigated. The research was carried out in 9 village, 3 district and 2 plateau. Interviews were performed with 70 persons in total. There is a dense population in areas dominated by gorges, high mountains, lush forests and abundant rainfall. As a result of dense population, vegetation destroyed with farming, fuel, accommodation etc purposes. Local people provides livelihood with especially tea, farming, animal husbandry and trade in the region.

2. Materials and methods

In research area, field and land study is executed in 40 days between the months of June –August (2010). Ethnobotanical data were collected through these studies. Working group is composed of usually 2, sometimes 3

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people. Interviews were conducted with people in research area and settlement. Resource people were selected who has knowledge and experience about topic and recognized around the people. The information was obtained from 70 resource people. Also, age, occupation, gender, village names of people were noted and given in table 1. Local names of plants, usable parts and purposes of utilization were investigated while ethnobotanical data collecting. Informations were confirmed interviews with different people. The plant samples were collected from the area in terms of ethnobotany and these samples have been identified using Flora of Turkey and the Aegean Islands (Davis et al., 1965-1985; 1988; Güner et al., 2000). Also, the specimens were recorded as a herbarium material in Sakarya University Herbarium.

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

Age	Gender and name	Occupation	Name of the village
71	Woman	Housewife	Geçitli
50	Woman	Farmer	Geçitli
73	Woman	Housewife	Taflancık
60	Man	Headman	Dereyurt
50	Man	Tradesmen	Pınarca
26	Woman	Housewife	Geçitli
78	Woman	Housewife	Tavşanlı
47	Woman	Housewife	Geçitli
63	Man	Carpenter	Geçitli
75	Woman	Housewife	Yeniköy
80	Woman	Housewife	Geçitli
57	Woman	Housewife	Geçitli
66	Woman	Housewife	Balaban Hamzalı District
78	Woman	Housewife	Balaban Doğan District
65	Man	Driver	Balaban Merkez
71	Man	Contractor	Pınarca
65	Woman	Housewife	Geçitli
80	Man	Headman	Yeniköy
67	Man	Farmer	Pınarca
66	Woman	Housewife	Pınarca
63	Woman	Housewife	Geçitli
68	Man	Farmer	Pınarca
63	Woman	Farmer	Geçitli
72	Man	Farmer	Geçitli
67	Man	Farmer	Geçitli
27	Woman	Housewife	Taflancık
65	Woman	Farmer	Geçitli
68	Woman	Farmer	Balaban Hamzalı District
85	Man	Retired	Fındıklı
41	Woman	Farmer	Yeniköy
66	Woman	Housewife	Geçitli
78	Woman	Housewife	Dereyurt
65	Man	Farmer	Geçitli
50	Woman	Housewife	Geçitli
70	Woman	Housewife	Geçitli
47	Man	Tradesmen	Geçitli
80	Man	Contractor	Pınarca
77	Man	Farmer	Geçitli
40	Man	Contractor	Pınarca
85	Woman	Housewife	Geçitli
82	Man	Farmer	Geçitli
65	Woman	Housewife	Pınarca
68	Woman	Housewife	Pınarca
83	Woman	Housewife	Taflancık
78	Woman	Housewife	Aydınöz
60	Man	Headman	Aydınöz

Table 1. (continuid)

70	Man	Contractor	Geçitli
66	Woman	Housewife	Geçitli
45	Woman	Pharmacist	Geçitli
68	Man	Farmer	Mesoraş Plateau
68	Woman	Farmer	Mesoraş Plateau
72	Woman	Housewife	Dağdibi District
65	Man	Contractor	Çağlayan
75	Woman	Housewife	Dülgerli
67	Man	Tradesmen	Dülgerli
68	Man	Carpenter	Çağlayan
43	Woman	Housewife	Dülgerli
85	Woman	Housewife	Dağdibi District
27	Man	Officer	Dağdibi District
76	Man	Retired	Dağdibi District
59	Man	Retired	Dülgerli
50	Woman	Housewife	Çağlayan
56	Woman	Housewife	Dağdibi District
52	Man	Worker	Dülgerli
63	Man	Retired	Dülgerli
73	Woman	Housewife	Dülgerli
47	Woman	Housewife	Dülgerli
30	Woman	Housewife	Dağdibi District
80	Woman	Housewife	Fındıklı
67	Woman	Housewife	Dülgerli

3. Results

The traditional use of medicinal plants plays a significant role in human life in Turkey . It is shown that local people use plants especially for food, medicine, ornaments, tools, fuel and other purposes. Women are more knowledgeable than men about utilization of plants for food and medicine in the region. Ethnobotany information received from 70 persons, 50 of which are female. 40 of these women are housewife. Men who interested in farming were more sophisticated than others about ethnobotany. As a result of studies natural distribution of 101 plant, 78 of these utilized taxa were used for food, 58 taxa for medical and 25 taxa for different purposes .The results given in table 2 (food), 3 (medicine) and 4 (other purpose). At the end of the field studies, 101 taxa included in 49 families ethnobotanical features were identified.

Table 2. Plant used as a food in Hayrat and Kalkandere

Species and Family	Local name	Part used	Usage form
<i>Equisetum arvense</i> L. (Equisetaceae)	Çam otu	All parts	Animal feed
<i>Actinidia chinensis</i> Planch. (Actinidiaceae)	Kivi	Fruit	Eaten as a fruit
<i>Carpinus betulus</i> L. (Betulaceae)	Külgen (Gürgen)	Seeds	Consume as a cookie
<i>Trachystemon orientalis</i> (L.) G.Don (Boraginaceae)	Salut, Fumora	Leaves and root	The leaves are eaten with butter and roasted Aerial parts used as an animal feed
<i>Brassica oleracea</i> L. (Brassicaceae)	Karalahana	Leaves and petiole	Consume as a meal
<i>Campanula lactiflora</i> M. Bieb. (Campanulaceae)	Mincoloş	All parts	Consume as a feed
<i>Silene vulgaris</i> (Moench) Garecke var. <i>commutata</i> (Guss.) Coode et Cullen (Caryophyllaceae)	Otlak	All parts	Animal feed

Table 2. (continued)

<i>Stellaria media</i> (L.)Vill. Subsp. <i>media</i> (Caryophyllaceae)	Zurzula	All parts	Meal is done such as spinach, salad
<i>Beta vulgaris</i> L. (Chenopodiaceae)	Pancar	Whole plants	Consume as a pickle
<i>Commelina communis</i> L. (Commelinaceae)	Zurzuli	All parts	Animal feed
<i>Achillea latiloba</i> Ledep.ex Nordm. (Compositae)	Yaban kendiri	All parts	Animal feed
<i>Centaurea appendicigera</i> C.Koch (Compositae)	Peygamber çiçeği	All parts	Animal feed
<i>Cirsium rhizocephalum</i> subsp. <i>sinuatum</i> (Boiss.) Davis & Parris (Compositae)	At dikenii	All parts	Consume as soup
<i>Leontodon hispidus</i> var. <i>glabratus</i> (W.Koch)Bisch. (Compositae)	Sütlü	All parts	Animal feed
<i>Telekia speciosa</i> (Schreber)Baumg. (Compositae)	Furnofila	All parts	Aniaml feed
<i>Convolvulus arvensis</i> L. (Convolvulaceae)	Liçiği	All parts	Animal feed
<i>Cornus mas</i> L. (Cornaceae)	Kızılıcık	Fruit	Made jam, marmalade and sirup from fruit
<i>Corylus avellana</i> L. Var. <i>pontica</i> (C.Koch) Winkler (Corylaceae)	Fındık	Seeds,stem	Eaten as a fruit
<i>Cucumis sativus</i> L. (Cucurbitaceae)	Hıyar	Fruit,stem and flower	Fruit eaten as a salad Stem and leaves used as an animal feed
<i>Cucurbita maxima</i> L. (Cucurbitaceae)	Kastanicça kabağı	Fruit	Made pumpkin pie
<i>Lagenaria siceraria</i> (Mol.)Standl. (Cucurbitaceae)	Su kabağı	Fruit	Eaten as a meal
<i>Diospyros lotus</i> L. (Ebenaceae)	Trabzon hurması	Fruit	Eaten as a fruit
<i>Rhododendron luteum</i> Sweet (Ericaceae)	Çifin	Flower	Consume as a honey
<i>Rhododendron ponticum</i> L. (Ericaceae)	Komar	Flowers	Consume as a honey
<i>Vaccinium arctostaphylos</i> L. (Ericaceae)	Likapa	Fruits	Eaten as a fruit, jam
<i>Vaccinium myrtillus</i> L. (Ericaceae)	Likarba	All parts	Eaten as a fruit
<i>Phaseolus vulgaris</i> L. (Fabaceae)	Fasulye	Fruit	Eaten as a meal
<i>Trifolium pratense</i> L. Var. <i>americanum</i> Harz (Fabaceae)	Gün çiçeği	All parts	Animal feed
<i>Castanea sativa</i> Mill. (Fagaceae)	Kestane	Seed	Eaten as a fruit
<i>Ribes biebersteinii</i> Berl.ex DC. (Grossulariaceae)	Frenk üzümü	Fruits	Made marmalade from fruit

Table 2. (continued)

<i>Juglans regia</i> L. (Juglandaceae)	Ceviz	Fruit	Eaten as a fruit
<i>Lamium garganicum</i> subsp. <i>reniforme</i> (Montbret&Aucher ex Bentham)R.R.Mill (Labiatae)	Otlak	All parts	Animal feed
<i>Mentha longifolia</i> (L.) Hudson subsp. <i>longifolia</i> (Labiatae)	Nane	Leaves	Consume as a spices
<i>Origanum vulgare</i> L.subsp. <i>hirtum</i> (Link) Ietsw. (Labiatae)	Köy çayı çiçeği	Flowers	Drink as a tea
<i>Prunella vulgaris</i> L. (Labiatae)	Bahar çiçeği	All parts	Animal feed
<i>Salvia pocalata</i> Nábelek (Labiatae)	Çiçekli fomari	All parts	Animal feed
<i>Allium cepa</i> L. (Liliaceae)	Soğan	Leaves and stem	Used in food
<i>Allium sativum</i> L. (Liliaceae)	Sarmusak	Stem	Used in food
<i>Smilax excelsa</i> L. (Liliaceae)	Zimbilaçi dikenli	Stem	Stem is eaten roasted
<i>Ficus carica</i> L. Subsp. <i>carica</i> (Moraceae)	İncir	Leaves and fruits	Leaves dried and drunk as a tea Fruit eaten
<i>Morus alba</i> L. (Moraceae)	Beyaz dut	Fruit	Eaten as a fruit and molasses
<i>Orchis stevenii</i> Reichb. (Orchidaceae)	Otlak	All parts	Animal feed
<i>Oxalis corniculata</i> L. (Oxalidaceae)	Ekşili ot, Ekşika	All parts	Used in meal
<i>Plantago major</i> L. Subsp. <i>major</i> (Plantaginaceae)	Singir otu, Damar otu	All parts	Drink as a tea, Leaves eaten as a salad
<i>Holcus lanatus</i> L. (Poaceae)	Pamuk otu	All parts	Animal feed
<i>Zea mays</i> L. (Poaceae)	Mısır	Seed	Made soup and bread
<i>Polygonum bistorta</i> L. Subsp. <i>carneum</i> (Koch)Coode&Cullen (Polygonaceae)	Otlak	All parts	Animal feed
<i>Rumex obtusifolius</i> L. Subsp. <i>subalpinus</i> (Schur)Celak. (Polygonaceae)	Lapaza	All parts	Animal feed
<i>Aquilegia olympica</i> Boiss. (Ranunculaceae)	Otlak	All parts	Animal feed
<i>Cerasus avium</i> (L.)Moench (Rosaceae)	Kiraz	Fruit	Eaten as a fruit
<i>Cerasus vulgaris</i> Miller (Rosaceae)	Vişne	Fruits	Eaten as a fruit and jam
<i>Cydonia oblonga</i> Miller (Rosaceae)	Ayva	Fruit	Eaten as a fruit
<i>Eriobotrya japonica</i> (Thunb.)Lindl. (Rosaceae)	Muş,yenidünya	Fruits	Eaten as a fruit and jam
<i>Fragaria ananassa</i> Duchesne (Rosaceae)	Osmanlı çileği	Fruits	Eaten as a fruit and jam

Table 2. (continued)

<i>Fragaria vesca</i> L. (Rosaceae)	Yabani Çilek	Fruits	Eaten as a fruit and jam
<i>Laurocerasus officinalis</i> Roemer (Rosaceae)	Kastaniçça karamişi	Fruit	Eaten as a fruit
<i>Malus sylvestris</i> Miller (Rosaceae)	Elma	Fruit	Eaten as a fruit
<i>Mespilus germanica</i> L. (Rosaceae)	Muşmula, döngel	Fruit	Eaten as a fruit
<i>Persica vulgaris</i> Miller (Rosaceae)	Şeftali	Flower and fruit	Eaten as a fruit
<i>Prunus domestica</i> L. (Rosaceae)	Ağustos eriği	Fruits	Eaten as a fruit
<i>Prunus spinosa</i> L. (Rosaceae)	Kış eriği	Fruits	Eaten as a fruit
<i>Rubus caesius</i> L. (Rosaceae)	Fuska	Fruit	Made jam
<i>Rubus idaeus</i> L. (Rosaceae)	Handuka	Fruit	Made jam
<i>Citrus deliciosa</i> Ten. (Rutaceae)	Mandalina	Fruits	Eaten as a fruit
<i>Citrus limon</i> (L.)Burm.f. (Rutaceae)	Limon	Fruits	As a drink
<i>Citrus medica</i> L. (Rutaceae)	Ağaç kavunu	Fruits	Jam
<i>Citrus sinensis</i> (L.)Osbeck (Rutaceae)	Portakal	Fruits	Eaten as a fruit
<i>Capsicum annum</i> L. (Solanaceae)	Biber	Fruits	Used in meal
<i>Lycopersicon esculentum</i> Miller (Solanaceae)	Domates	Fruits	Used in meals and salads
<i>Solanum melongena</i> L. (Solanaceae)	Patlıcan	Fruits	Used in meal
<i>Solanum tuberosum</i> L. (Solanaceae)	Patates, Kukulika, Kartof	Stem	Consume as a food
<i>Camelia sinensis</i> (L.)O.Kuntze (Theaceae)	Çay	Flowers	Drink as a tea
<i>Tilia platyphyllos</i> Scop. (Tiliaceae)	İhlamur	All parts	Drink as a tea
<i>Astrantia maxima</i> _tope subsp. <i>maxima</i> (Umbelliferae)	Otlak	All parts	Animal feed
<i>Chaerophyllum aureum</i> L. (Umbelliferae)	Yemlik	All parts	Animal feed
<i>Petroselinum crispum</i> (Miller) A.W.Hill (Umbelliferae)	Maydanoz	Leaves	Used in meal or eaten fresh
<i>Urtica Dioica</i> L. (Urticaceae)	Sığran(ısırgan)	All parts	Meal is done
<i>Vitis vinifera</i> L. (Vitaceae)	Üzüm	Fruit	Molasses is done, eaten as a fruit

Village numbers: 1.Geçitli, 2.Taflancık, 3.Dereyurt, 4.Pınarca, 5.Tavşanlı,6.Yeniköy,7.Aydınöz,8.Çağlayan, 9.Dülgerli, 10.Balaban Doğan District,11.Balaban Hamzalı District,12.Dağdibi District,13.Mesoraş Plateau, 14.Ağaçbaşı Plateau

Table 3. Plant used for medicinal propose in Hayrat and Kalkandere

Species and Family	Local name	Village number	Part used	Usage form
<i>Asplenium adianthum-nigrum</i> L. (Aspleniaceae)	Yar otu	1-4, 9,10	All parts	All parts boiled and washed for Eczema
<i>Asplenium trichomanes</i> subsp. <i>quadrivalens</i> D.E.Mey. (Aspleniaceae)	Şıcan Otu	1-3,7-10	All parts	All parts boiled and washed for eczema
<i>Phyllitis scolopendrium</i> (L.)Newman (Aspleniaceae)	Karamiş matuçali	2-4,6-12	All parts	Dried and drunk as a tea for diabetes
<i>Equisetum arvense</i> L. (Equisetaceae)	Çam otu, Dede sakalı	3,4,7-9	All parts	Dried and drunk as a tea for eczema
<i>Pinus sylvestris</i> L. (Pinaceae)	Alat	1-4,6,9,12	Stem and cone	Resin used for bronchitis ,stomachache Cone boiled for rheumatism
<i>Impatiens noli-tangere</i> L. (Balsaminaceae)	Şınaticça	1-14	Leaves	Used for henna
<i>Alnus glutinosa</i> (L.) Gaertner spp. <i>glutinosa</i> (Betulaceae)	Kızılağaç	1-6, 8, 9,12,13	Leaves	Crushed and placed to wound as a blood _toper Matured leaves used as henna
<i>Carpinus betulus</i> L. (Betulaceae)	Külgen	1-3, 6-9, 12,14	Leaves	Leaves boiled and drunk for cholesterol
<i>Myosotis lazica</i> M.Popov (Boraginaceae)	Mavi papatya	1-10,1,2,13	Aerial parts	Dried and boiled for eyes
<i>Trachystemon orientalis</i> (L.) G. Don (Boraginaceae)	Salut,fumora	1-8, 10,12	Stem,root	Stem used for intestinal health Root used for inflammation
<i>Sambucus ebulus</i> L. (Caprifoliaceae)	Livor	4-7,9-12	Fruit	Eaten for hemorrhoids
<i>Stellaria media</i> (L.) Vill. subsp. <i>media</i> (L.) Vill (Caryophyllaceae)	Zurzula	3-5,7,9,11,12	Stem,leaves	Eaten as a meal for headache
<i>Beta vulgaris</i> L. (Chenopodiaceae)	Pancar	2-4, 7-10,12	Leaves	Boiled for eczema Eaten for intestinal illness
<i>Cirsium rhizocephalum</i> subsp. <i>sinuatum</i> L. (Compositae)	At dikeneni	3,5,8-12	All parts	Boiled and drunk for dyspnea
<i>Leontodon hispidus</i> L. var. <i>glabratus</i> (W.Koch)Bisch. (Compositae)	Yılan dili	1-9,12,13	Leaves	Leaves crushed and placed wound as blood stoper
<i>Convolvulus arvensis</i> L. (Convolvulaceae)	Liğiçi	1-9	All parts	Used as an ointment
<i>Cornus mas</i> L. (Cornaceae)	Kızılcık	1-14	Fruits	Made a sirup from fruits for abdominal pain
<i>Corylus avellana</i> L. var. <i>pontica</i> (C. Koch)Winkler (Corylaceae)	Funduk	1-14	Seeds	Seeds eaten for anaemia
<i>Sedum spurium</i> M.Bieb. (Crassulaceae)	Koyun memesi	1-3,7,8,10-14	All parts	Dried and cooked for wound
<i>Brassica oleracea</i> L. (Cruciferae)	Kara lahana	2,4,5,7-10	Leaves	Petiole eaten for heartburn Petiole heated for earache Leaves mixed with milk for wound
<i>Capsella bursa – pastoris</i> (L.) Medik. (Cruciferae)	Manih	3-5,7,10	Stem	Eaten as a meal for intestine
<i>Cardamine raphanifolia</i> Pourr. (Cruciferae)	Mayasıl otu, kuş lahanası	2,3,6-8,11,13	All parts	Eaten for hemorrhoid
<i>Cucurbita maxima</i> L. (Cucurbitaceae)	Kastanicça kabağı	1-7,11,13,14	Fruits	Cores eaten for intestinal parasites
<i>Cucurbita pepo</i> L. (Cucurbitaceae)	Süt kabağı	1	Fruits	Cooked and used externally for tonsil
<i>Diospyros kaki</i> L.f. (Ebenaceae)	Trabzon hurması	1-3, 5, 6, 9,11,13,14	Leaves	Boiled for acne and bran
<i>Rhododendron ponticum</i> L. (Ericaceae)	Komar	1-4,6,7,9-13	Leaves	Leaves boiled for an hour and drunk for pruritus

Table 3. (continued)

<i>Vaccinium myrtillus</i> L. (Ericaceae)	Likarba	2-13	All parts	Fruit jam used for intestine ,Fruit eaten fresh for diabetes and constipation,as blood formingLeaves usedtoothache ,Fresh leaves boiled and drunk for digestion
<i>Phaseolus vulgaris</i> L. (Fabaceae)	Fasulye	1-9,11,14	Seed	Seeds placed to ear for mumps
<i>Castanea sativa</i> Miller (Fagaceae)	Kestane	3-8,10-14	Flowers	Drunk as a tea for dyspnea and cardiovascular health
<i>Ribes biebersteinii</i> Berl. ex DC. (Grossulariaceae)	Frenk üzümü	2-9	Fruits	Used for urinary disorders
<i>Juglans regia</i> L. (Juglandaceae)	Ceviz	1-8,1-13	Leaves,fruit	Leaves boiled and drunk for cancer, used externally for joint pain Fruit boiled and drunk for kidney stone Immature fruit exposed to lemon and olive, and drunk for goiter
<i>Mentha longifolia</i> (L.) Hudson subsp. <i>longifolia</i> (Labiatae)	Nane	2-9	Leaves	Eaten for stomachache, Crushed and drunk for intestinal worm
<i>Prunella vulgaris</i> L. (Labiatae)	Bumbur otu	1-9	Flowers	Drunk as a tea for gastric ulcer
<i>Allium cepa</i> L. (Liliaceae)	Soğan	1-8	Stem	Used externally for inflammation Boiled and drunk for constipation
<i>Ficus carica</i> L. subsp. <i>carica</i> (Moraceae)	İncir	1-14	All parts	Branch used externally scorpion sting Leaves boiled and drunk for asthma Fruit used for constipation
<i>Morus alba</i> L. (Moraceae)	Dut	1-12	Fruits	Eaten as a blood forming
<i>Oxalis corniculata</i> L. (Oxalidaceae)	Ekşili ot, ekşika	2-4,6-9	All parts	Chewed and eaten for periodontal disease and constipation
<i>Platanus orientalis</i> L. (Platanaceae)	Çınar	1,3,5,8-12	Leaves	Drunk as a tea for calcification
<i>Plantago major</i> L. subsp. <i>major</i> (Plantaginaceae)	Singir otu, damar otu	2-5,7,9,10-13	All parts	Leaves used externally for wound Dried seed eaten for hemorrhoid Cooked with parsley for stomache diseases Boiled and drunk for urinary inflammation,psoriasis, rheumatism, hair loss Dried and drunk as a tea for infarction
<i>Hordeum vulgare</i> L. (Poaceae)	Arpa	1-6,8,9,11,12	Seeds	Eaten as a soup for diabetes
<i>Zea mays</i> L. (Poaceae)	Mısır	1-9,12	Tassel, corncob	Tassel boiled and drunk for kidney pains Tassel and corncob boiled and drunk to pass kidney Stone
<i>Rumex obtusifolius</i> L.subsp. <i>subalpinus</i> (Schur)Celak. (Polygonaceae)	Lapaza	1,4,7,8,12-14	Seed	Dried and drunk as a tea for hemorrhoids
<i>Alchemilla barbatiflora</i> Juz. (Rosaceae)	Fındık otu	5-7,12-14	All parts	Boiled and drunk for liver inflammation, dyspnea, gynecological diseases
<i>Cerasus avium</i> (L.) Moench (Rosaceae)	Kiraz	1-12	Stem	Boiled and drunk for intestine
<i>Cerasus vulgaris</i> Miller (Rosaceae)	Vişne	2-9	Fruits	Eaten as a fruit for mental deficiency

Table 3. (continued)

<i>Cydonia oblonga</i> Miller (Rosaceae)	Ayva	3-8,12	Leaves	Boiled and drunk for diarrhea Dried leaves used as an expectorant
<i>Lauraceranus officinalis</i> Roemer (Rosaceae)	Kastanicça karamişi	1-9	All parts	Core crushed and eaten for diabetes, stomache diseases, hemorrhoids Leaves cooked and used externally for hemorrhoids Fruit eaten for diabetes Leaves used for backache, diuretic
<i>Malus sylvestris</i> Miller (Rosaceae)	Elma	1-14	Leaves	Boiled and drunk for colic
<i>Mespilus germanica</i> L. (Rosaceae)	Muşmula,döngel	2,4,7,9	Leaves	Boiled and drunk for kidneys
<i>Persica vulgaris</i> Mill. (Rosaceae)	Şeftali	1-5,7,9,10	Leaves	Leaves boiled and water drunk for İntestinal worms and cough
<i>Rubus caesius</i> L. (Rosaceae)	Fuska dikeneni, pamuk dikeneni, handuka, fiskofi	1-4,6,8,9,11	Roots, leaves	Roots boiled and eaten as a soup for eczema, hemorrhoids and psoriasis All parts used for infertility Leaves placed to wound as a blood stopper
<i>Citrus limon</i> (L.)Burm.f. (Rutaceae)	Limon	1-14	Fruits	Drunk with mint for stomachache and cold Drunk with honey for cough
<i>Solanum tuberosum</i> L. (Solanaceae)	Patates	1-9-11-13	Stem	Crushed and drunk for stomache diseases Used for eye bruises
<i>Camelia sinensis</i> (L.)O.Kuntze (Theaceae)	Çay	1-14	Leaves	Tea salved to skin or itchy skin
<i>Tilia platyphyllos</i> Scop. (Tiliaceae)	Ihlamur	1-14	Leaves	Drunk as a tea for bronchitis
<i>Petroselinum crispum</i> (Miller)A.W. Hill (Umbelliferae)	Maydanoz	2-9	Leaves	Boiled and drunk for inflammation and kidney Stone
<i>Urtica dioica</i> L. (Urticaceae)	Sığran	1-9	Seed	Dried and drunk as a tea for cancer Dried and mixed with honey for bronchitis
<i>Vitis vinifera</i> L. (Vitaceae)	Üzüm	3,6,7,9,10	Seed	Grinded and mixed with honey for anemia

Village numbers: 1.Geçitli, 2.Taflancık, 3.Dereyurt, 4.Pınarca, 5.Tavşanlı, 6.Yeniköy, 7.Aydınöz,8.Çağlayan, 9 Dülgerli, 10.Balaban Doğan District, 11.Balaban Hamzalı District, 12.Dağdibi District, 13.Mesoraş Plateau, 14.Ağaçbaşı Plateau

Table 4. Plant used as ornaments, tools, fuel and other purpose in Hayrat and Kalkandere

Species and family	Local name	Part used	Usage form
<i>Pinus sylvestris</i> L. (Pinaceae)	Çam,Alat	Stem	Making of kitchenware, timber, roofage and beehive
<i>Hedera helix</i> L. (Araliaceae)	Sarmaşık	Branches	Making of chair
<i>Impatiens noli-tangere</i> L. (Balsaminaceae)	Şinaticça	Leaves	Used as a henna
<i>Alnus glutinosa</i> (L.) Gaertner spp. <i>glutinosa</i> (Betulaceae)	Kızılağaç	Stem	Used as timber,firewood and fuel
<i>Carpinus betulus</i> L. (Betulaceae)	Külgen,Gürgen	Stem	Making of timber, shovel and pickaxe handle
<i>Buxus sempervirens</i> L. (Buxaceae)	Şimşir	Stem	Making of spoon and ladle

Table 4. (continued)

<i>Corylus avellana</i> L. var. <i>pontica</i> (C.Koch)Winkler (Corylaceae)	Fındık	Stem	Making of basket
<i>Lagenaria siceraria</i> (Molina) Standl. (Cucurbitaceae)	Su kabağı	Fruits	Making of toy
<i>Diaspyros kaki</i> L. (Ebenaceae)	Trabzon hurması	Stem	Making of spade handle
<i>Rhododendron luteum</i> Sweet (Ericaceae)	Çifin	Stem	As a fuel
<i>Rhododendron ponticum</i> L. (Ericaceae)	Komar	Stem	As a fuel
<i>Vaccinium myrtillus</i> L. (Ericaceae)	Likarba	Branch	Making of besom
<i>Robinia pseudoacacia</i> L. (Fabaceae)	Yalancı akasya	Stem	Making of fiddle and car safe
<i>Castanea sativa</i> Miller (Fagaceae)	Kestane	Stem	Making of chair
<i>Pteridium aquilinum</i> (L.) Kuhn (Hypolepidaceae)	Eğrelti otu	All parts	Spread under the animals
<i>Juglans regia</i> L. (Juglandaceae)	Ceviz	Seed	Making of toy
<i>Juncus effusus</i> L. (Juncaceae)	Sazlık otu	Stem	Making of hat
<i>Morus alba</i> L. (Moraceae)	Dut	Stem	Making of fiddle
<i>Fraxinus ornus</i> L. (Oleaceae)	Dışbudak	Stem	Making of car safe
<i>Phytolacca americana</i> L. (Phytolaccaceae)	Dünya güzeli	Seed	Making of cloth paint
<i>Zea mays</i> L. (Poaceae)	Mısır	Corn cob	Making of bag
<i>Cerasus avium</i> (L.) Moench (Rosaceae)	Kiraz	Stem	Furniture manufacturing
<i>Persica vulgaris</i> Miller (Rosaceae)	Şeftali	Branches	As a fuel
<i>Camellia sinensis</i> (L.) O.Kuntze (Theaceae)	Çay	Stem	Making of besom
<i>Tilia platyphyllos</i> Scop. (Tiliaceae)	Flambur(ıhlamur)	Stem	Making of beehive and instrument

Village numbers: 1.Geçitli,2.Taflancık,3.Dereyurt,4.Pınarca,5.Tavşanlı,6.Yeniköy,7.Aydınöz,8.Çağlayan,9.Dülgerli,10.Balaban Doğan District,11.Balaban Hamzalı District,12.Dağdibi District,13.Mesoraş Plateau,14.Ağaçbaşı Plateau.

4. Conclusions

The traditional use of medicinal plants plays a significant role in human life in Turkey . The completing description of ethnobotanical wealth of Turkey, recording and must be presented to the public. In Hayrat-Kalkandere and its around natural distribution of 49 families included 101 plants in area ethnobotanical features were determined. According to the determinations, 58 of these utilized taxa were used for medical, 78 taxa for food and 25 taxa for different purposes.

It is found that *Myosotis lazica*, *Stellaria media* and *Sedum spurium* taxa were used for medical purposes first time (Bulut, 2009; Tuzlacı, 2001; Koyuncu, 2010; Altundağ, 2011; Polat, 2011; Türkan, 2006; Çakılcioglu, 2011; Keskin, 2008; Kendir, 2010; Yıldırım, 2004; Genç, 2006; Ezer, 2006; Güneş, 2011; Kültür, 2007; Koca, 2010; Yıldız, 2010; Satıl, 2008).

In region, the use of plants were found to be very large. Study shows that local people use plants for treatment of eczema, diabetes, cholesterol, intestinal diseases, hemorrhoids, skin diseases, urinary inflammation, rheumatism, cancer, respiratory disorders and as analgesic and blood stopper. Plants used as food in the region were found to be used in cooking, vegetables, fruits, spices, jellies, jams and pickles.

According to the results of this research, 58 species are recorded as medicine in Hayrat and Kalkandere. Some of these plants are used for different purposes in our regions. For example; *Asplenium trichomanes* subsp. *quadrivalens* all parts are boiled and used for eczema, *Pinus sylvestris* cones boiled are for rheumatism, *Carpinus betulus* leaves are boiled and drunk for cholesterol, *Urtica dioica* seeds are dried and drunk as a tea for treatment of cancer, dried and mixed with honey for bronchitis, *Cirsium rhocephalum* subsp. *sinuatum* all parts are boiled and drunk for dyspnea, *Ribes biebersteinii* fruits are used for treatment of urinary disorders, *Vaccinium myrtillus* leaves are boiled and drunk for digestion, *Prunella vulgaris* flowers are drunk as a tea for gastric ulcer, *Lauracerasus officinalis* leaves are cooked and used externally for hemorrhoids. Details about plants used for medicinal propose given in table 3.

78 species recorded as food in Hayrat and Kalkandere. *Trachystemon orientalis* leaves are eaten with butter and roasted. *Stellaria media* subsp. *media* all parts are used for doing meal such as spinach, salad. *Cirsium rhocephalum* subsp. *sinuatum* aerial parts are consumed as a soup. Details about plants which used as a food given in table 2.

Our findings were compared with previous studies, while *Cornus mas* fruits used for sunstroke in Merzifon (Ezer, 2006), it used for abdominal pain in Hayrat-Kalkandere. *Urtica dioica* L. used for treatment of diabetes in Tokat, it used for treatment of cancer in Hayrat-Kalkandere (Fidan, 2004). *Ficus carica* subsp. *carica* has different usages. Its fruits used for treatment of warts in Ordu, its leaves used for asthma and fruits used for constipation in Hayrat-Kalkandere. (Türkan, 2006). While *Castanea sativa* leaves used treatment of pertussis in Rize, it used for dyspnea and cardiovascular health in Hayrat-Kalkandere (Yaldız, 2010).

With this study, we believe that we will contribute to future studies regarding the use of plants to helping our biological richness be known and be protected more.

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