

ETHNOBOTANY OF MEDICINAL PLANTS USED IN SOME PARTS OF THE NORTHERN BLACK SEA COAST REGION (BULGARIA)

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Abstract: This study is part of an ethnobotanical investigation of the medicinal plants in the Northern Black Sea coast region, which includes the area from the village of Durankulak to the town of Obzor. The boundaries were determined using the map of the floristic regions in Bulgaria. Field work was conducted in the period from April to September 2016. 106 people from 17 communities were surveyed. The study was carried out on the basis of the survey methodology. Interviews with the local population were conducted using original questionnaires prepared upfront. The respondents belong to different gender, ethnicity, age and education groups. This work represents the results of surveys in small communities only, since the field work is not over yet.

The data from the different applications of medicinal plants in the life of the local population were processed and summarized.

INTRODUCTION

The term "ethnobotany" was used for the first time by John Harshberger in 1895 at the University of Pennsylvania. He specified the subject of ethnobotany to be "Plants used by primitive and aboriginal people" (Kolossova, 2011). With time, the meaning of the concept evolved and improved. Nowadays, ethnobotany is defined as the study of the relationship between plants and people, most often

focusing on the local habitats of plants and the different applications plants have in human life (McClatchey, 2009). Ethnobotany can be viewed as a scientific basis of a social strategy for presenting the results of scientific research to local communities and other interested parties with the aim of managing and protecting the natural resources in an efficient and environmentally friendly manner (Dimitrova, Raycheva, 2010).

On a world-wide scale, due to the globalization trend, the traditional knowledge, including that regarding medicinal plants, vanishes and gets lost even more. The use of synthetic and artificial products is on the rise and at the same time indigenous plant species are replaced with introduced ones which push out the plants used traditionally (Koleva et al., 2015). This determines the significance of conducting ethnobotanical studies with the objective of getting acquainted with, preserving and updating this knowledge. The current state of traditional knowledge in Bulgaria is the subject of scientific interest on the part of researchers from several scientific fields.

For centuries, the Bulgarians have been using herbal remedies to treat some frequently encountered diseases. One of the first written records in Bulgaria regarding the use of medicinal plants by St. Ivan Rilski dates back to the end of the 9th and the beginning of the 10th century (Nedelcheva, 2011). It states that he used more than 80 species of herbs (Nedelcheva, 2009).

Many contemporary publications include data about the application of medicinal plants such as “Wild Useful Plants in Bulgaria” (Stojanov, Kitanov, 1960). The spread of the most widely used medicinal plants is discussed in “A Chorological Atlas of the Medicinal Plants in Bulgaria” (Bondev, 1995) and other works.

Bulgaria is rich in diverse natural resources and cultural traditions. As per the latest data (Asyov et al., 2012), 4,102 species of vascular plants are found in Bulgaria. The total number of species of medicinal plants in Bulgaria is 842 belonging to 444 genera and 118 families. Of those, 730 genera of spontaneously spreading vascular plants are included in the Law on Medicinal Plants (2000). The remaining 114 genera also exhibit spontaneously spreading and are described in the literature on medicinal plants in Bulgaria (Zahariev, 2015).

The wealth of plant resources is impressive also at regional level. For comparison, only in the phytogeographical region of Northeastern Bulgaria, there are 600 species of medicinal plants (Zahariev, Ivanov, 2014). In the floristic sub-region of the Northern Black Sea coast, the number of medicinal plants is 593. On the territory of the Franga plateau, a portion of which forms part of the studied area, there are 362 species of medicinal plants (Zahariev, Kacheva, 2015).

Despite the impressive wealth of medicinal plants, the Northern Black Sea coast region has remained unstudied in terms of ethnobotany. The objective of this investigation is to conduct an ethnobotanical study of the medicinal plants in the area to the north of the city of Varna. It forms part of a broader ethnobotanical investigation of the medicinal plants in the Northern Black Sea coast region.

MATERIALS AND METHODS

The study was conducted in the period from April to September 2016. It was carried out in 17 communities encompassing the area from the village of Kichevo to the village of Durankulak. The study covers 2 towns, Kavarna (43°43'N, 28°33'E) and Shabla (43° 53'N, 28°32' E), as well as 15 villages: Bozhurets (43°42' N, 28°29' E), Bulgarevo (43°40' N, 28°41' E), Vaklino (43°64' N, 28°50' E), Gorun (43°49' N, 28°48' E), Dorankulak (43°68' N, 28°53' E), Ezerets (43°59' N, 28°53' E), Kamen Briag (43°45' N, 28°55' E), Kichevo (43°27' N, 27°96' E), Krapets (43°62' N, 28°56' E), Kumanovo (43°27' N, 27°93' E), Poruchik Chunchevo (43°48' N, 28°46' E), Sveti Nikola (43°43' N, 28°49' E), Topola (43°41' N, 28°26' E), Tyulenovo (43°49' N, 28°57' E) and Hadji Dimitar (43°47' N, 28°44' E) (Fig. 1).

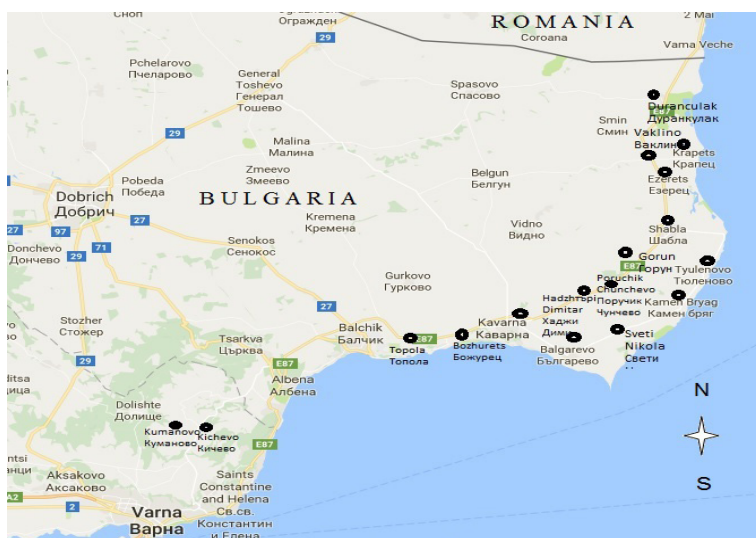


Fig. 1. A map of the communities whose residents took part in the survey.

The map of the floristic regions in Bulgaria (Jordanov 1966) was used to determine the boundaries of the Northern Black Sea coastal region. The study was carried out on the basis of the survey methodology. Interviews with the local population were conducted using original questionnaires prepared upfront. There were 106 respondents in total. Their number from a community is at least 2% of the village inhabitants and under 2% of the town inhabitants. The respondents were selected randomly. They belong to different age, ethnicity, gender and education groups.

The study entails the collection of data regarding the use of medicinal plants in the human and veterinary medicines. Information was collected also regarding the vernacular names of the plants. The data obtained were analyzed regarding the method of obtaining herbs, following whose recommendation they are used, drawbacks of the herbs and the frequency of using the herbs.

The concepts of “medicinal plant” and “herb” are used in the sense as set forth in the Law on Medicinal Plants (2000). A medicinal plant is a plant that can be used to obtain herbs. An herb is a separate morphological part of a plant or an entire plant as well as its fruits and its seeds which in a fresh or dried state is intended for treatment and preventive use, for the manufacturing of medicinal drugs, for food, cosmetic and technical purposes.

The taxonomical state and the denomination of the taxa have been interpreted according to the International Plant Names Index (<http://www.ipni.org>). The “Identification Guide to the Plants in Bulgaria, 2011” (Delipavlov et al., 2011) was used to identify the species.

RESULTS AND DISCUSSION

Distribution of the respondents by ethnicity

Since the survey was conducted in communities with predominantly Bulgarian population, ethnicities such as Romani, Turkish and Tatar are present only to a small extent. The ethnicity ratio is as follows: Bulgarians – 98 persons (92%), Romani – 4 persons (3.77%), Turks – 2 persons (1.89%) and Tatars – 2 persons (1.89%).

Age composition of the respondent group

The percentage of those in the older age groups is higher since the majority of the residents in the smaller communities have an average age above 50 years (Table 1).

Table 1. Age composition of the respondent group

Age Group	Number (%) of respondents
10-20	5 (4.72%)
21-30	8 (7.55%)
31-40	10 (9.43%)
41-50	21 (19.81%)
51-60	23 (21.70%)
61-70	23 (21.70%)
71-80	13 (12.26%)
81 and above	3 (2.83%)

Distribution of the respondents by level of education

From the respondents, 1 person (0.94%) with elementary education; 22 persons (20.75%) with primary education, 69 persons (65.09%) with secondary education and 14 persons (13.21%) with higher education.

Distribution of the respondents by gender

The respondent group consists of 28 men (26.42%) and 78 women (73.58%) The more active participation by women reflects the fact that men more frequently refuse to take part in surveys.

Distribution of the respondents by employment

With respect to the employment factor, we obtained the following results: students 2 persons (1.89%), employed 64 persons (60.38%), unemployed 6 persons (5.66%) and retired 34 persons (32.08%).

Application in Human Medicine

The medicinal plants used in the human medicine comprise 96 species from 86 genera and 45 families (*Appendix 1*). The average number of medicinal plants used by the respondents is 6.92 species per person.

With respect to their origin, the medicinal plants can be split into several groups. The largest is the group of medicinal plants that can be found in the flora of the Northern Black Sea coast. This group comprises 53 species while 1 species is described in the medicinal plants literature. For instance, *Matricaria chamomilla*, *Thymus sp.*, *Tilia tomentosa*, *Hypericum perforatum*, *Ecballium elaterium* belong to the first group. In this case, the geographical principle is the main reason for the people's preferences. They predominantly use plants that are widespread in proximity to the place where they live.

The medicinal plants typical for Bulgaria but common in other floristic regions belong to 6 species: *Arctostaphylos uva-ursi*, *Aesculus hippocastanum*, *Coriandrum sativum*, *Geranium macrorrhizum*, *Salvia officinalis*, *Sideritis scardica*. Although remote in terms of their range, these plants are available through the retail network.

The species of medicinal plants foreign to the Bulgarian flora are 22 species. These include both the species introduced to Bulgaria as well as imported plants. The introduced plant species include: *Aloe vera*, *Calendula officinalis*, *Pelargonium roseum*, *Pelargonium zonale*, *Tagetes patula*. The imported plants are the following: *Camellia sinensis*, *Citrus x limon*, *Laurus nobilis*, *Myristica fragrans*, *Olea europea*.

The cultivated plants that are used for medicinal purposes comprise 15 species such as *Allium cepa*, *Beta vulgaris*, *Brassica oleracea*, *Helianthus annuus*, *Zea mays*.

Several communities located in different parts of the country have been studied regarding the use of medicinal plants in Bulgaria by local inhabitants

(Kozuharova et al., 2012). That investigation describes 77 species of herbs, 32 of which do not appear in our study. This is due to the fact that a larger part of those 32 herbs are not common for the floristic region of the Northern Black

Sea Coast. An interesting fact is that the current study describes 51 new species used by the local inhabitants. One part of those, comprising 31 species, are common for the phytogeographical region, such as *Achillea clypeolata*, *Arctum lappa*, *Clinopodium vulgare*, *Chelidonium majus*, *Fragaria vesca*, *Paliurus spina-christi*, *Malva sylvestris*, *Mespilus germanica*, *Viscum album*, *Verbascum densiflorum*, *Tribulus terrestris* and others. Another part of the used plants, 20 species, are grown as domestic plants. Examples of those are *Beta vulgaris*, *Coriandrum sativum*, *Helianthus tuberosus*, *Tagetes patula*, *Pelargonium roseum*, *Lavandula angustifolia*, *Rosmarinus officinalis* etc.

The ethnobotanical investigation of the medicinal plants in the region of the town of Iserih (Kultur, S., Semra, S., 2009) which is located in the floristic region of Northeastern Bulgaria and is in the vicinity of the region researched here describes 68 species of medicinal plants are used by the local residents. Of those, 28 species are not mentioned in our study yet we describe 56 new species common to the flora of the Northern Black Sea Coast.

This study is the first to describe 31 medicinal plants found in the Northern Black Sea Coast region and used by the local inhabitants for medicinal purposes.

The questions below were asked during the survey:

“Where do you obtain the herb from?”

From a total of 749 responses (a respondent uses more than one medicinal plant), the following results were obtained:

I grow herb(s)	157 (20.96%)
I gather herbs	499 (66.62%)
I buy herbs	67 (8.95%)
I buy a ready-to-use product	26 (3.47%).

It is a peculiar fact that herbs are predominantly gathered in the wild (66.62%). This is an example of the locals’ preserved connection with nature. On the other hand, this fact also bears testimony to the weakly developed economy. If people were busier, they would have more trouble finding the time to gather the herbs themselves, dry them, preserve them and prepare a medicine from them.

The cultivated herbs have a significant share (20.96%). This is related to their practicality for the people: through cultivation the medical plants are easily accessible and are always “available”. Another advantage of cultivation is that this protects the natural populations of medical plants. Unfortunately, this is not a motive for cultivating medical plants.

When conducting the survey, we observed that more often the medicinal plants are gathered by the village inhabitants, primarily by women. The town inhabitants as well as the younger people prefer to buy herbs or ready to use products.

“Following whose recommendation do you use the medicinal plant?”

gave the following answers:

A physician	40 (5.34%)
A friend	60 (8.01%)
A relative	254 (33.91%)

Based on my own appraisal	250 (33.38%)
A book	62 (8.28%)
A newspaper	59 (7.88%)
Television	24 (3.20%).

Leading is the knowledge about using the medicinal plants obtained from older relatives (33.91%). This speaks about continuity between generations with respect to traditional medicine.

An interesting fact is that according to the respondents, physicians seldomly recommend them medicinal plants. The mass media (newspapers and television) as well as the books on medicinal plants also have a surprisingly small contribution. At the same time, in other fields the advertisements of products determine the demand – for instance in the food industry and cosmetics where many plants are also present.

Books are mostly used as a source of information about herbs by better educated people as well as by the town residents.

“Has the medicinal plant got a substitute?”

produced the following answers:

Yes, it has a natural substitute	2 (0.27%)
Yes, it has an artificial substitute	46 (6.14%)
Yes, it has a synthetic substitute	13 (1.74%)
No, there is no substitute	688 (91.86%).

The high percentage (91.86%) of responses that herbs have no substitutes speaks about the fact that people rely on them and would not replace them with other means of treatment. On the other hand, the low percentage (0.27%) for the response that the herb has a natural substitute indicates that the people have no in-depth knowledge and cannot replace a medicinal plant of one species with another. Most frequently, replacing an herb with an artificial or synthetic product is done by town residents.

“How often do you use medicinal plants?”

led to the following answers:

Daily	67 (8.95%)
Weekly	40 (5.34%)
Monthly	61 (8.14%)
During a specific season	447 (59.68%)
Annually	25 (3.34%)
More seldom	109 (14.55%)

The most frequent use of medicinal plants occurs during a given season (59.68%) and this is the winter. This fact means that a substantial part of the respondents do not use herbs often. The use of medicinal plants for preventive purposes is relatively low – daily (8.95%) and weekly (5.34%). Most often, village residents and the older people use herbs daily or weekly. An interesting fact is for instance using medicinal plants “more seldom” (14.55%). This is related to

a precise incident such as an insect bite, treating and washing surface wounds, laying cataplasms etc. The high percentage for these responses speaks about the wide application of medicinal plants for emergencies. This is a factor conditioned by economic development and the remoteness of small communities with respect to medical facilities.

Veterinary Medicine

The plants used for the treatment of animals represent 18 species. They belong to 17 genera and 15 families (*Appendix 2*). From them, 9 species are specified in the Law on Medicinal Plants. The remaining 9 species are described in the medicinal plant literature. Similar to the human medicine, here too the medicinal plants from the local flora are represented with the largest number, 12 species. This constitutes 2.02% of the total number of medicinal plants in the floristic sub-region of the Northern Black Sea coast. These plants for example are *Cotinus coggygria*, *Matricaria chamomilla*, *Plantago major*, *Taraxacum officinale*, *Juglans regia*. From the medicinal plants that are foreign for the Bulgarian flora, only 2 species are used: *Aloe vera* and *Calendula officinalis*. The cultivated plants come from 4 species: *Allium cepa*, *Allium sativum*, *Cucurbita sp.* and *Cydonia oblonga*.

All the medicinal plants used in the veterinary medicine are gathered in the wild or grown. No purchased herbs are used. The people have obtained the knowledge for using the medicinal plants in the veterinary medicine from their older relatives. No drawbacks regarding the used medicinal plants were reported. The locals do not comment the reason for this: whether because the animals support them well or because the people are not interested in what the animals feel.

The lower use of medicinal plants in the veterinary medicine is determined by the relatively smaller number of people (22 persons) who raise animals. It is also determined by the fact that people prefer to use ready-made chemical products to treat their animals.

CONCLUSIONS

The population in the surveyed area uses a significant number of medicinal plants - 96 herbs. This study is the first to describe 31 medicinal plants found in the Northern Black Sea Coast region and used by the local inhabitants for medicinal purposes.

A larger percentage the people, i.e. 66.2%, gather the herbs they use. The knowledge of using the medicinal plants is most often obtained from older relatives. The role of physicians, specialized literature on medicinal plants and the mass media is minor. The respondents most often believe that the herbs have no substitutes and use them primarily during a particular season (59.68%). The healing properties of plants for emergencies and incident situations are well known. The predominant use of indigenous species of medicinal plants is a proof

of the existence of local knowledge in the folk medicine. Simultaneously, the use plants that are foreign for the Bulgarian flora demonstrates the impact of globalization and the social and cultural development even in the use of herbal products today.

Appendix 1. A list of the medicinal plants used in the human medicine

№	Family	Scientific name	Vernacular name Bulgarian (transliterated)	LMP	Origin
1.	Adoxaceae	<i>Sambucus ebulus</i> L.	Тревист бѣз, бѣзак (Trevist baz, bazak)	+	1
2.	Adoxaceae	<i>Sambucus nigra</i> L.	Черен бѣз (cheren baz), дървесен бѣз (darvesen baz), свирчина (svirchina), свирчовина (svirchovina)	+	1
3.	Amaranthaceae	<i>Beta vulgaris</i> L.	Червено цвекло (cherveno tsveklo)		4
4.	Amaryllidaceae	<i>Allium cepa</i> L.	Кромид лук (kromid luk)		4
5.	Amaryllidaceae	<i>Allium porrum</i> (L.) J. Gay.	Праз (praz)		4
6.	Amaryllidaceae	<i>Allium sativum</i> L.	Чесън (chesan)		4
7.	Amaryllidaceae	<i>Galanthus nivalis</i> L.	Кокиче (kokiche)	+	1
8.	Anacardiaceae	<i>Cotinus coggygia</i> (Scop.)	Смрадлика (smradlika), тетра (tetra)	+	1
9.	Apiaceae	<i>Anethum graveolens</i> L.	Копър (kopar)		4
10.	Apiaceae	<i>Apium graveolens</i> L.	Целина (tselina), керевиз (kereviz)		4
11.	Apiaceae	<i>Coriandrum sativum</i> L.	Кориандър (koriandar)	++	4
12.	Apiaceae	<i>Daucus carota</i> L.	Морков (morkov)		4
13.	Apiaceae	<i>Petroselinum crispum</i> (Mill.) A.W.Hill.	Магданоз (magdanoz)		3
14.	Apiaceae	<i>Pimpinella anisum</i> L.	Анасон (anason)		2
15.	Asparagaceae	<i>Asparagus officinalis</i> L.	Зайча сянка (zaycha sianka)	+	1
16.	Asphodelaceae	<i>Aloe vera</i> (L.) Burm.	Алое вера (aloe vera)		3
17.	Asteraceae	<i>Achillea clypeolata</i> Sibth&Sm.	Жълт равнец (zhult ravnets)	+	1
18.	Asteraceae	<i>Achillea millefolium</i> L.	Бял равнец (bial ravnets)	+	1
19.	Asteraceae	<i>Arctium lappa</i> L.	Репей (repey)	+	1
20.	Asteraceae	<i>Artemisia alba</i> Asso.	Пелин (pelin)	+	1
21.	Asteraceae	<i>Calendula officinalis</i> L.	Невен (neven)		3

22.	Asteraceae	<i>Cardus acanthoides</i> L.	Магарешки бодил (magareshki bodil)	+	1
23.	Asteraceae	<i>Cichorium intibus</i> L.	Цикори (tsikori), синя жлъчка (sinuya zhlichka), синя китка (sinuya kitka)	+	1
24.	Asteraceae	<i>Helianthus annuus</i> L.	Слънчоглед (slanchogled)		4
25.	Asteraceae	<i>Helianthus tuberosus</i> L.	Гулия (gulia), земна ябълка (zemna yabalka), иерълма (yeralma)		3
26.	Asteraceae	<i>Matricaria chamomilla</i> L.	Лайка (layka)	+	1
27.	Asteraceae	<i>Stevia rebaudiana (Bertoni) Bertoni.</i>	Стевия (stevia)		3
28.	Asteraceae	<i>Tagetes patula</i> L.	Камшица (kamshitsa)		3
29.	Asteraceae	<i>Tanacetum vulgare</i> L.	Вратига (vratiga)	+	1
30.	Asteraceae	<i>Taraxacum officinale</i> Waber.	Глухарче (gluharche)	+	1
31.	Asteraceae	<i>Tussilago farfara</i> L.	Подбел (podbel)	+	1
32.	Betulaceae	<i>Betula pendula</i> Roth.	Бреза (breza)	+	1
33.	Betulaceae	<i>Corylus avellana</i> L.	Леска (leska), лешник (leshnik)	+	1
34.	Brassicaceae	<i>Brassica oleracea</i> L.	Зеле (zele)		4
35.	Brassicaceae	<i>Brassica nigra</i> W.D.J.Koch	Синап (sinap), хардал (hardad)	+	1
36.	Crassulaceae	<i>Sempervivum sp.</i>	Дебела мара (debela mara)		1
37.	Cucurbitaceae	<i>Ecbalium elaterium</i> (L.) A.Rich.	Луда краставица (luda krastavitsa), дива краставица (diva krastavitsa)	+	1
38.	Equisetaceae	<i>Equisetum telmatea</i> Ehrh.	Голям хвощ (goliam hvosht)	+	1
39.	Ericaceae	<i>Arctostaphylos uva-ursi</i> Spreng.	Мечо грозде (mecho grozde)	++	2
40.	Fabaceae	<i>Cassia acutifolia</i> Delile.	Майчин лист (maychin list)		1
41.	Fabaceae	<i>Melilotus officinalis</i> (L.)Pall.	Лечебна комунига (lechebna komuniga)	+	1
42.	Fabaceae	<i>Phaseolus vulgaris</i> L.	Бял боб (bial bob), фасул (fasul)		4
43.	Fabaceae	<i>Robinia pseudoacacia</i> L.	Акация (akatsia), салкъм (salkum)	+	3
44.	Geraniaceae	<i>Geranium macrorrhizum</i> L.	Здравец (zdravets)	++	1
45.	Geraniaceae	<i>Pelargonium roseum</i> L.	Индрише (indrishe)		3
46.	Geraniaceae	<i>Pelargonium zonale</i> L.	Мушкато (mushkato)		3

47.	Ginkgoaceae	<i>Ginkgo biloba</i> L.	Гинко (ginko)		3
48.	Hippocastanaceae	<i>Aesculus hippocastanum</i> L.	Кестен (kesten)	++	2
49.	Hypericaceae	<i>Hypericum perforatum</i> L.	Жълт кантарион (zhalt kantarion)	+	1
50.	Juglanaceae	<i>Juglans regia</i> L.	Обикновен орех (obiknoven oreh)	+	1
51.	Lamiaceae	<i>Agastache rugosa</i> (Fisch. & C.A.Mey.) Kuntze	Корейска мента (koreyska menta), агастаче (agastache)		3
52.	Lamiaceae	<i>Clinopodium vulgare</i> L.	Котешка стъпка (koteszka stupka)	+	1
53.	Lamiaceae	<i>Lavandula angustifolia</i> Mill.	Лавандула (lavandula)		3
54.	Lamiaceae	<i>Melissa officinalis</i> L.	Маточина (matochina)	+	1
55.	Lamiaceae	<i>Mentha piperita</i> L.	Мента (menta)		1
56.	Lamiaceae	<i>Mentha spicata</i> L.	Джоджен (djodjen), гюзум (gyuzum)	+	1
57.	Lamiaceae	<i>Ocimum basilicum</i> L.	Босилек (bosilek)		3
58.	Lamiaceae	<i>Origanum vulgare</i> L.	Риган (rigan)	+	1
59.	Lamiaceae	<i>Rosmarinus officinalis</i> L.	Розмарин (rozmarin)		3
60.	Lamiaceae	<i>Salvia officinalis</i> L.	Градински чай (gradinski chay)	++	2
61.	Lamiaceae	<i>Sideritis scardica</i> Griseb.	Мурсалски чай (mursalski chay)	++	2
62.	Lamiaceae	<i>Teucrium chamaedrys</i> L.	Червено подъбиче (cherveno podubiche)	+	1
63.	Lamiaceae	<i>Thymus sp.</i>	Мащерка (maszterka)	+	1
64.	Lauraceae	<i>Laurus nobilis</i> L.	Дафинов лист (dafinov list)		3
65.	Malvaceae	<i>Malva sylvestris</i> L.	Слез (slez), камбулеш (kambulesh), камбулешник (kambuleshnik)	+	1
66.	Moraceae	<i>Ficus carica</i> L.	Смокиня (smokinia), табан (taban)	+	1
67.	Myristicaceae	<i>Myristica fragrans</i> Gronov.	Индийско орехче (indiysko orehche)		3
68.	Oleaceae	<i>Olea europea</i> L.	Маслина (maslina)		3
69.	Papaveraceae	<i>Chelidonium majus</i> L.	Змийско мляко (zmiysko mliako)	+	1
70.	Pinaceae	<i>Pinus nigra</i> Y.F.Arn.	Черен бор (cheren bor)		1
71.	Plantaginaceae	<i>Plantago lanceolata</i> L.	Теснолист (tesnolist) живовляк (zhivovliak)	+	1
72.	Plantaginaceae	<i>Plantago major</i> L.	Широколист живовляк (shirokolist zhivovliak)	+	1

73.	Platanaceae	<i>Platanus x acerifolia</i>	Чинар (chinar), платан (platan)		4
74.	Poaceae	<i>Oryza sativa</i> L.	Ориз (oriz)		3
75.	Poaceae	<i>Zea mays</i> L.	Царевица (tsarevitsa)		4
76.	Portulacaceae	<i>Portulaca oleracea</i> L.	Тученица (tuchenitsa), пълзящ щир (palziasht shtir), свински щир (svinski shtir)	+	1
77.	Rhamnaceae	<i>Paliurus spina-christi</i> Mill.	Обикновена драка (obiknovena draka)	+	1
78.	Rosaceae	<i>Crataegus monogyna</i> Jacq.	Обикновен глог (obiknoven glog)	+	1
79.	Rosaceae	<i>Fragaria vesca</i> L.	Дива ягода (diva yagoda)	+	1
80.	Rosaceae	<i>Mespilus germanica</i> L.	Мушмула (mushmula)		1
81.	Rosaceae	<i>Prunus avium</i> L.	Череша (cheresha)		1
82.	Rosaceae	<i>Prunus spinosa</i> L.	Грънка (trunka), грънкосливка (trunkoslivka)	+	1
83.	Rosaceae	<i>Ribes nigrum</i> L.	Черен касис (cheren kasis)		1
84.	Rosaceae	<i>Rosa canina</i> L.	Шипка (shipka)	+	1
85.	Rosaceae	<i>Rosa damascena</i> Mill.	Маслодайна роза (maslodayna roza)		4
86.	Rutaceae	<i>Citrus x limon</i> (L.) Burm.	Лимон (limon)		3
87.	Salicaceae	<i>Salix babylonica</i> L.	Върба (vurba)		3
88.	Santalaceae	<i>Viscum album</i> L.	Бял имел (bial imel)	+	1
89.	Scrophulariaceae	<i>Verbascum densiflorum</i> Bertol.	Лопен (lopen), вълчи лапад (valchi lapad)	+	1
90.	Theaceae	<i>Camellia sinensis</i> Kuntze.	Чай (chay)		3
91.	Tiliaceae	<i>Tilia tomentosa</i> Moench.	Липа (lipa)	+	1
92.	Urticaceae	<i>Urtica dioica</i> L.	Коприва (kopriva)	+	1
93.	Violaceae	<i>Viola tricolor</i> L.	Теменуга (temenuga)	+	1
94.	Vitaceae	<i>Vitis vinifera</i> L.	Лоза (loza)		4
95.	Zingiberaceae	<i>Zingiber officinale</i> Roscoe.	Джиндифил (djindjifil)		3
96.	Zygophyllaceae	<i>Tribulus terrestris</i> Moench.	Бабини зъби (babini zubi)	+	1

Legend:

- LMP - The Law on Medicinal Plants
+ - A plant of the indigenous flora, specified in the Law on Medicinal Plants
++ - A plant of the flora of Bulgaria specified in the Law on Medicinal Plants
1 - A plant of the indigenous flora
2 - A plant of the flora of Bulgaria
3 - A plant foreign for Bulgaria
4 - A cultivated plant

Appendix 2. A list of the medicinal plants used in the veterinary medicine

№	Family	Scientific name	Vernacular name Bulgarian (transliterated)	LMP	Origin
1	Amarillidaceae	<i>Allium cepa</i>	Кромид лук (kromid luk)		4
2	Amarillidaceae	<i>Allium sativum</i>	Чесън (chesan)		4
3	Anacardiaceae	<i>Cotinus coggygria</i>	Смрадлика (smradlika), тетра (tetra)	+	1
4	Asphodelaceae	<i>Aloe vera</i>	Алое вера (aloe vera)		3
5	Asteraceae	<i>Calendula officinalis</i>	Неве (neven)		3
6	Asteraceae	<i>Matricaria chamomilla</i>	Лайка (layka)	+	1
7	Asteraceae	<i>Taraxacum officinale</i>	Глухарче (gluharche)	+	1
8	Crassulaceae	<i>Sempervivum sp.</i>	Дебела мара (debela mara)		1
9	Cucurbitaceae	<i>Cucurbita sp</i>	Тиква (tikva)		4
10	Fagaceae	<i>Quercus sp.</i>	Дъб (dub)		1
11	Juglanaceae	<i>Juglans regia</i>	Орех (oreh)	+	1
12	Lamiaceae	<i>Teucrium chamaedrys</i>	Червено подъбиче (cherveno podubiche)	+	1
13	Oleaceae	<i>Fraxinus ornus</i>	Мъждрян (muzhdrian), осен (osen)	+	1
14	Plantaginaceae	<i>Plantago major</i>	Широколист живовляк (shikorolist zhivovliak)	+	1
15	Rosaceae	<i>Cydonia oblonga</i>	Дюля (dyulia)		4
16	Salicaceae	<i>Salix sp.</i>	Върба (vurba)		1
17	Scrophulariaceae	<i>Verbascum densiflorum</i>	Лопен (lopen), вълчи лапад (vulchi lapad)	+	1
18	Urticaceae	<i>Urtica dioica</i>	Коприва (kopriva)	+	1

Legend:

- LMP - The Law on Medicinal Plants
- +
- ++ - A plant of the indigenous flora, specified in the Law on Medicinal Plants
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