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Medicinal Plants As A Food Source And Their Use For Culinary Purposes By The Local Population Of The Northern Black Sea Coast (Bulgaria) - Ethnobotanical Study.

Petya Boycheva^{1*}, Dimcho Zahariev², and Dobri Ivanov¹.

¹Faculty of Pharmacy, Department of Biology, Medical University „Prof. D-r Paraskev Stoyanov“ - Varna, 84 Tsar Osvoboditel Blvd., 9000 Varna, Bulgaria.

²Bishop Konstantin Preslavski University of Shumen, Faculty of Natural Sciences, 115, Universitetska Str., 9712 Shumen, Bulgaria.

ABSTRACT

The use of medicinal plants for food and other culinary purposes is the basis of the diet of Bulgarians. The aim of the present study is to identify medicinal plants used for culinary purposes by the local population along the North Black Sea coast. The survey was conducted in the period June 2014 - October 2017. The interviews with the local population were conducted "face to face" with the help of original questionnaires prepared in advance. The surveyed locals are 709 people from 32 settlements. The respondents were chosen at random. They are from different age groups, gender, ethnicity, education and employment. The folk names of the used medicinal plants are recorded. The results showed that almost all respondents (99.72%) use medicinal plants for food, spice, drink, flavoring and coloring of drinks and preservatives. The medicinal plants used for culinary purposes by the locals are 152 species, belonging to 132 genera from 62 families. With regard to ethnobotanical knowledge about the application of medicinal plants for culinary purposes, local knowledge is largely preserved and passed on to generations.

Keywords: Ethnobotany, medicinal plant, culinary purposes, North Black Sea Coast.

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*Corresponding author

INTRODUCTION

Plants as the main and natural source of food have been known in the distant past. Data obtained from a number of ethnographic and botanical studies give evidence on the nutritional diet and the use of plants, including medicinal plants, as food for Bulgarians [1-9]. Ethnobotany is a relatively new branch of science in Bulgaria. Despite the popularization of ethnobotany in recent years in Bulgaria, a number of areas of application of medicinal plants in Bulgarian lifestyle are still unexplored. It is only in the last 20 years that detailed ethnobotanical studies have been conducted [10-18]. Studies on the use of medicinal plants for culinary purposes have been published only for some regions in Bulgaria [19-22]. Bulgaria is rich in natural plant resources. The latest data indicate that there are 4102 species of vascular plants to be found in Bulgaria [23]. In total, there are 842 species of medicinal plants in Bulgaria, belonging to 444 genera and 118 families.

The richness of plant resources is impressive also at the regional level. By comparison, only in the floristic region of Northeastern Bulgaria, there are 600 species of medicinal plants [24]. In the floristic sub-region of the Northern Black Sea coast, the number of medicinal plants is 593 [9]. Despite the impressive wealth of medicinal plants, the Northern Black Sea coast region has remained unstudied in terms of ethnobotany (Fig. 1).

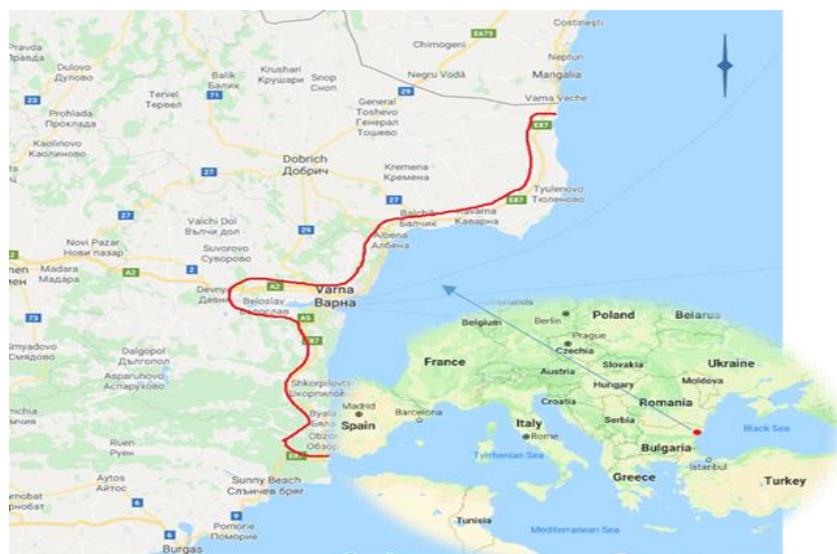


Fig. 1 A map of the communities whose residents took part in the survey (Borders are marked with a red contour)

The aim of the present study is to establish the taxonomic composition of medicinal plants used by the local population on the North Black Sea coast and the dependence of demographic indicators on their application. The study is part of a broader ethnobotanical study of medicinal plants along the northern Black Sea coast.

MATERIALS AND METHODS

The Northern part of the Black Sea coast floristic region is selected for carrying out this study. The boundaries were determined using The Map of the Floristic Regions in Bulgaria [26]. The boundary between the northern and southern parts of the region is outlined by the Balkan Mountains. The survey was conducted in the period from June 2014 to October 2017. It was carried out in 32 communities, including 8 towns and 24 villages.

Towns: Varna, Aksakovo, Beloslav, Kavarna, Shabla, Byala, Balchik and Obzor.

Villages: Bozhurets, Bulgarevo, Vaklino, Gorun, Ezeretz, Kamen Bryag, Kichevo, Krapetz, Kumanovo, Poruchik Chunchevo, Sveti Nikola, Topola, Hadzhi Dimitar, Ezero, Kazashko, Osenovo, Bliznatzi, Kamenar, Goritza, Kranevo, Shkorpilovtsi and Topoli.

The study was carried out on the basis of questionnaire survey. Interviews with the local population were conducted using original questionnaires prepared upfront. The respondents belong to different age, ethnicity, gender, education and employment groups. The interviews with the local population were conducted "face to face" with the help of original questionnaires prepared in advance. Medicinal plants are defined according to Annex to the Medicinal Plants Act of the Republic of Bulgaria [27]. There are also a number of species that are not included in the Annex to the Medicinal Plants Act of the Republic of Bulgaria, but are used and established in the official and folk medicine [28-31].

The taxonomical state and the denomination of the taxa have been interpreted according to the International Plant Names Index (IPNI) [32]. The family list is structured according to APG IV (Angiosperm Phylogeny Group, 2016) [33]. The Identification Guide to the Plants in Bulgaria [34] was used to identify the species and their origin. Poisonous plants list is defined by Bernhard-Smith [35], Hiller and Bickerich [36], Muenscher [37], Wagstaff [38]. Plants causing side effects in contact with them are listed according to Rycroft et al. [39] and Tampion [40].

The following statistical methods were used to process the obtained results:

- Correlation analysis to assess the correlation between the indicators tested (Pearson coefficient for quantitative indicators and Spearman coefficient for qualitative indicators);
- Student's t-curve in testing hypothesis for a statistically significant difference between two independent samples;
- Concentration coefficient (C) for nominal scales, Spearman coefficient (Sr) for ordinal scales, and Pearson coefficient (r) for interval scales were used to measure the strength of correlation.

For a null hypothesis significance level, $P < 0.05$ was accepted, with a confidence interval of 95%. The main measure of the dependency is the correlation coefficient r

When the correlation coefficient is positive, the relationship between the units is positive correlation. In the case of a negative sign of the correlation coefficient, the dependence is negative correlation. The IBM SPSS Statistics for Windows, Version 19.0 and Microsoft Excel 2010 software were used for data processing.

RESULTS AND DISCUSSION

As medicinal plants for culinary purposes, we consider those plants used for food, spices, beverages, colorants, beverage flavorings and preservative. 709 local residents along the Northern Black Sea coast were surveyed. 707 (99.72%) admitted they use medicinal plants for culinary purposes. The largest contributors are the plants used for food - 73 species, followed by plants used for the preparation of beverages - 49 species, spices - 47 species, colorants and flavorings - 41 species each, and 28 species of medicinal plants are used as preservative (Fig. 2).

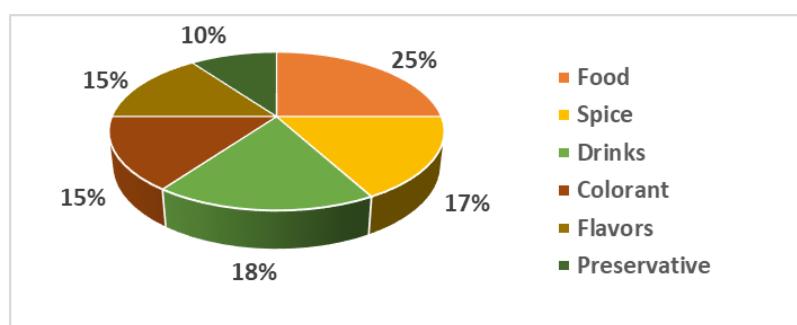


Fig. 2 Distribution of medicinal plants according to their culinary application

152 species of medicinal plants from 132 genera and 62 families are used by the local population for culinary purposes. Of these, 61 species from 46 genera and 25 families are characteristic of the Northern Black

Sea coast region (Table in Appendix). 17 species from 16 genera and 11 families are from the medicinal plants that are **foreign for the Bulgarian flora**. Medicinal plants characteristic for **another floristic region** of Bulgaria are 8 species from 6 genera and 5 families. **Cultivated plants** - 66 species from 57 genera and 22 families are used. 54 species are included in the Law on Medicinal Plants of the Republic of Bulgaria. The remaining 98 species are listed as medicinal plants in the specialized literature on medicinal plants published in Bulgaria. No data has been obtained for the culinary area of the Northern Black Sea coast region in the culinary application of a new ethnobotanical plant species. All 152 medicinal plant species used by the local population are described in the specialized literature.

Wild medicinal plants species, used in the past for food by St. Ivan Rilsky [7], are still used today by the local population of the studied area. This proves the stability of the information flow that has been transmitted and maintained over the years. It is proved that there is continuity in the folk knowledge and ethnobotanical application of medicinal plants. For comparison, Nedelcheva [14] describes 88 species of wild plants used for food, which is 26 species more than those reported in this study. The smaller number of wild medicinal plant species used for food in this study is due to the fact that it includes information for only one floristic region of Bulgaria. However, for the surveyed area, 5 species of medicinal plants characteristic for the local flora, have been described, not cited by Nedelcheva [14]. These are: *Convolvulus arvensis*, *Tilia platyphyllos*, *T. tomentosa*, *Pinus nigra* and *Sorbus domestica*, but these species are described for use in other literary resources [4]. A study [11] on Isperih region identifies 11 species of medicinal plants used by locals for food. Of these, only *Pinus sylvestris* is not used by the people living along the Northern Black Sea coast region, probably because the species is not naturally spreading in the studied floristic area. A study by Cherneva [18] described 15 species of medicinal plants with the two main culinary applications - as food and spice, used by the residents in the wetlands along the Northern Black Sea coast region. The same survey found that 45.95% of surveyed local residents use medicinal plants for food. In addition to the difference in the number of medicinal plants used for culinary purposes, we also note a significant difference in the number of respondents using medicinal plants. This is due to the fact that in this study all applications of medicinal plants for culinary purposes were examined - a total of 6. An ethnobotanical survey of the local population along Turkey's Black Sea coast [41] showed results similar to ours, according to which 97.60% of respondents use medicinal plants for food and spice. Among the medicinal plants used for culinary purposes by the local people along the Northern Black Sea coast, the families *Rosaceae*, *Lamiaceae* and *Asteraceae* are the most numerous. These families also include some of the most commonly used medicinal plants for culinary purposes: *Prunus avium* (46.68%), *Malus domestica* (44.7%), *Anethum graveolens* (70.16%), *Petroselinum crispum* (71.85%), *Mentha spicata* (53.18%), *Satureja hortensis* (62.66%) etc.

The biggest number of responses for the use of medicinal plants for culinary purposes were obtained for *Rumex patientia* (86.14%), *Urtica dioica* (84.41%) and *Vitis vinifera* (61.39%). All three are used as food, and the vine is also used as preservative and for preparation of beverages.

Application of medicinal plants according to their usable part

Regarding the application of the useable parts of medicinal plants, the most commonly used are: fruits - 31 species, stems and leaves - 24 species and seeds - 20 species (Fig. 3).

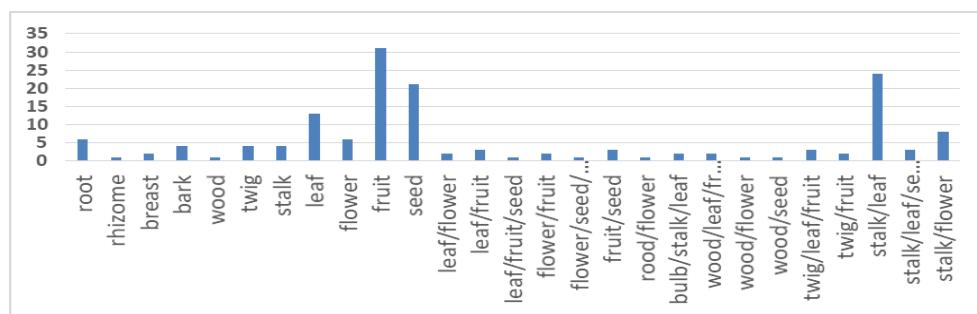


Fig. 3. Distribution of medicinal plants according to their usable part

The use of **underground parts** (root, rhizome, bulb and tuber) is for food, spice, beverage preparation and preservative. The plants from which they are obtained are: *Allium cepa*, *A. sativum*, *Daucus carota*, *Helianthus tuberosus* etc.

Bark, wood and twigs are used from 18 medicinal plants species belonging to 15 genera and 12 families. The application of these plant parts is for flavoring, colorants and preservative. The most commonly used wood is *Morus alba* and *M. nigra* for alcoholic beverages colorants, as well as twigs from *Vitis vinifera* as preservative in the preparation of pickles.

Stems and leaves from 65 medicinal plants species belonging to 47 genera and 23 families are reported as used. They are used for food, spices and flavoring. This group includes plants that are widely used for food, such as: *Urtica dioica*, *Vitis vinifera*, *Rumex patientia*, *Allium cepa*, *Allium sativum* etc.

Blossoms and fruits are obtained from 66 medicinal plants species belonging to 49 genera and 24 families. They are used for culinary purposes such as food, spices, flavoring and beverage colorants and preservatives. The most commonly used plants of this group are: *Sambucus nigr*, *Cornus mas*, *Malus domestica*, *Prunus armeniaca*, *Prunus avium* etc.

Seeds and oil are obtained from 25 medicinal plants species from 25 genera and 17 families. This group includes plants used for food, seasoning, preparation and flavoring of beverages and preservatives. The most commonly used plants in this group are: *Corylus avelana*, *Juglans regia*, *Anethum graveolens*. For culinary purposes, the most common use is between 6 and 10 medicinal plants species per person. The reason for this is the large number of applications. The use of medicinal plants for culinary purposes includes 6 different applications. Many of the plants described have more than one use in cooking. Medicinal plants for culinary purposes are used unprocessed or after appropriate technological processing – heat treatment, drying, freezing, preserving. They can be consumed fresh for salads, toppings and main dishes, or as fresh fruit. Medicinal plants are used for the preparation of cooked meals such as: pasta, soups, baking, stews, desserts. Fruits from some plants are prepared as pickles, jams and sweets (molasses, treacle, pestil) and compotes. In today's modern kitchen, many medicinal plants blossoms and fruits are used for various dishes and desserts decorations.

Application of medicinal plants for culinary purposes

For **food**, the local population uses 73 medicinal plants species belonging to 55 genera and 25 families. The most commonly used medicinal plants for food by the local population in the Northern Black Sea coast region are: *Urtica dioica* (84.41%), *Juglans regia* (77.23%), *Malus domestica* (79.63%), *Rumex patientia* (75.94%) (Table in Appendix). Some medicinal plants are used for food throughout the Northern Black Sea coast region, while others are used only in selected settlements or only from specific ethnic groups. For example, the town of Kavarna and nearby villages are reported as areas where people prepare soups, salads and pastry with *Chenopodium album* and *Atriplex hortensis*. These plants are also kept frozen for food during the winter season. An interesting fact is that according to Pieroni et al. [42], the local Tatar and Romanian population in Southern Dobrudzha (Romania) prepares pastry and soups with *Atriplex hortensis*. The plant is also popular among the locals of Northern Dobrudzha (Kavarna and nearby villages) and is used in similar culinary recipes. Also similar is the use of *Urtica dioica* by the inhabitants of Dobrudzha, both in Bulgaria and Romania. It is used fresh for salads, soups and dishes, for baking, and is also stored frozen or dry for food during the winter season. Another interesting fact is that the preparation of stuffed cabbage rolls (sarmi) with leaves of *Vitis vinifera* is considered traditional by the inhabitants of the entire Balkan Peninsula [43, 44]. The use of *Convolvulus arvensis* as food was reported by 4 (0.57%) people living in the village of Shkorpilovtsi. An interesting fact is that according to Stoyanov, Kitanov [4], in the past, in the area of Svilengrad (Mezek village), the locals prepared dishes and zelnik (leek pastry) from the leaves and stems from the same plant. The plant can only be used for food before blossoming. After blossoming, the poisonous 'glucoside convolvulin' accumulates [45].

In the village of Poruchik Chunchevo, fruits from *Malus sylvestris* and *Pyrus pyraster* are used for the preparation of pickles. In some communities, there is an indication of consumption of blossoms and fruits from *Malva sylvestris*. The inhabitants of Aksakovo and Beloslav add green fruits from *Prunus cerasifera* to soups for a pleasant sour taste. In the same settlements, fresh salads from *Medicago sativa* and *Amaranthus sp.* are

prepared. There is a common use of dried fruits from *Prunus domestica* and fresh fruits from *Cydonia oblonga* as an ingredient in vegetarian or meat stews. Unfortunately, the knowledge about some of them is retained only by older local people. This fact proves that some of the traditional knowledge about the use of medicinal plants for culinary purposes is being replaced by modern nutrition.

Pictures 4, 5, 6 and 7 present some of the more interesting culinary recipes recorded by locals along the Northern Black Sea coast region. The dishes were prepared and photographed by the researchers of this study.

Fig. 4. Tarator with stems and leaves from *Portulaca oleracea*.



Fig. 5. Rice dish decorated with medicinal plants fresh blossoms



Fig. 6. Pastry dish with stems and leaves *cerefolium* stems



Fig. 7. Pickles from *Anthrscus* from *Portulaca oleracea*



47 medicinal plants spices from 38 genera and 19 families are used as **spices** in the studied area. Most responses were received for the use of: *Petroselinum crispum* (71.85%), *Anethum graveolens* (70.16%), *Satureja hortensis* (62.66%), *Apium graveolens* (35.64%) and *Citrus limon* (35.36%). We found differences in the use of medicinal plants for spices in different parts of the studied area. For example, the use of *Nectaroscordum siculum* ssp. *bulgaricum*. In the area of Shabla, Kavarna, as well as the surrounding villages, the local population does not

know or use the plant, while the inhabitants of Byala, Obzor, Aksakovo and some of the respondents from Varna often use the plant as dry or fresh spice. In the dry state, the plant is used as an ingredient in the preparation of 'herb salt'.

Less common and unusual uses of medicinal plants as spices are: dried leaves from *Ficus carica*, twigs from *Piper nigrum* and twigs from *Cydonia oblonga*. They are all used for seasoning meat.

The most common medicinal plants species for the whole studied area is the use of *Allium cepa*, *A. sativum*, *Petroselinum crispum*, *Anetum graveolens*, *Apium graveolens*, *Satureja hortensis*, *Piper nigrum* and *Capsicum annuum*.

For the preparation of different **drinks**, the population of the Northern Black Sea coast region uses 41 medicinal plants species from 33 genera and 20 families. Most responses were received for the use of: *Vitis vinifera* (61.39%), *Sambucus nigra* (38.19%), *Rubus sp. diversa* (20.37%). We found no differences in the use of medicinal plants as a beverage in different settlements. Most commonly, *Sambucus nigra* blossoms are used to make juice. The preparation of *Sambucus ebulus* fruit syrup is often reported. *Carduus acanthoides* fruit juice is made in the villages of Hadji Dimitar, Gorun and Shabla. The use of fruit from cultivated plants for the preparation of juices, nectars and compotes is widespread. For the production of wine and spirits (brandy and liqueurs) blossoms and fruits are used from: *Vitis vinifera*, *Robinia pseudoacacia*, *Carduus acanthoides*, *Prunus cerasifera*, *Cornus mas*, *Juglans regia* and many cultivated plants species. Freshly squeezed juices are prepared from: *Daucus carota*, *Beta vulgaris ssp. vulgaris var. vulgaris*, *Aronia sp.* etc. Beverages replacing coffee are prepared from the seeds of: *Phaseolus vulgaris* (St. Nicholas), *Secale cereale*, *Cicer arietinum*, *Theobroma cacao* and roots from *Cichorium intybus* and *Taraxacum officinale*. The residents of Varna and Aksakovo mentioned about the preparation of juice from *Helianthus tuberosus*, which has a refreshing effect. The use of cabbage soup is traditional for residents of the entire Northern Black Sea coast region. An important place in the traditions of the people living along the Northern Black Sea coast is home-made wine and brandy. In addition to the raw material used to make the drink, various medicinal plants are used to flavor and color the final product. The use of *Artemisia* species is widely practiced by the locals of Beloslav, due to the region's characteristic production of wormwood.

41 medicinal plants species from 29 genera and 16 families are used as **flavors**. The most common use is *Pelargonium roseum* for flavoring compotes. Some medicinal plants species that are widely used as flavors for various alcoholic and non-alcoholic beverages are: *Pelargonium roseum* (46.98%), *Citrus limon* (35.36), *Mentha piperita* (27.84%). As flavors for alcoholic beverages are commonly used medicinal plants species such as *Sideritis scardica*, dried fruits (prunes) from *Prunus armeniaca*, *Malus sp.*, *Pyrus sp.* Medicinal plants species such as *Artemisia sp.*, *Thymus sp.*, *Cydonia oblonga*, *Rosmarinus officinalis*, *Origanum vulgare* etc. are used for washing and aromatizing barrels in wine production. An interesting application of *Coriandrum sativum* as flavor for boiling boilers in the production of brandy is indicated in the village of Hadji Dimitar, as well as using leaves from *Ficus carica* for barrel steaming in Bulgarevo.

For the beverage **colorant** in the studied area, 42 species belonging to 30 genera and 20 families are used. Wood and peel from *Morus alba* (20.51%) and *M. nigra* (43.56%), *Quercus species* (9.47%), *Cotinus coggygria*, *Cornus mas*, dried fruits from *Malus sp.*, *Cornus mas*, *Pyrus pyraster* etc. are most commonly used for coloring beverages. Mostly alcoholic beverages are colored. An interesting application of the poisonous species *Adonis aestivalis* was reported in the village of Bozhurets, where the petals of the plant are used by children to give color to chewing gum.

28 medicinal plants species belonging to 23 genera and 15 families are used as a natural **preservative** for the preparation of pickles in the Northern Black Sea coast region. Most commonly used are *Zea mays* (28.43%), *Armoracia rusticana* (34.37%) and *Sinapis nigra* (26.87%). There is a significant use of leaves and twigs from *Ficus carica*, *Prunus cerasus*, *Vitis vinifera*. There was no difference in the application of the plants as preservative by the residents in the different settlements.

Comparison of the extent of usage of medicinal plants according to the size of the settlement

536 (99.63%) urban residents and 171 (100%) rural residents of all the surveyed respondents answered that they used medicinal plants for culinary purposes.

After analyzing the results, we found that residents of towns and villages use a similar number of medicinal plants for culinary purposes.

Although residents of small and large settlements use approximately the same number of medicinal plants, we found that there was some difference in the species used. We have described medicinal plants used for culinary purposes only by the villagers, such as: *Fagus sylvatica*, *Malus sylvestris*, *Phytolacca americana*, *Pinus nigra*, *Rubus ideus*, *Sorbus domestica* etc. It was noted that city dwellers often do not know these plants. Medicinal plants that are indicated for use only by city residents are such as: *Sechium edule*, *Chenopodium quinoa*, *Cynara cardunculus var. scolymus*, *Beta vulgaris var. cicla* etc. The urban population knows and uses foreign species of medicinal plants, which are increasingly entering the culinary arts and are not familiar to residents in small settlements. Usually big commercial stores offer these plants to urban population. We also found differences in the way of how medicinal plants are obtained. For example, in rural areas, more commonly used medicinal plants are those collected from nature, such as: *Urtica dioica*, *Vitis vinifera*, *Rumex patientia*, *Juglans regia*, *Coryllus avellana*, etc., while the same plants are acquired through the commercial network by residents of Varna. In smaller settlements, people have retained the names and knowledge about using wild medicinal plants as food. Old local culinary recipes with medicinal plants are also preserved. Some of the well-known traditional medicinal plants used in the past for food are now considered to be new and modern among the younger residents of Varna. Such plants species are: *Portulaca oleracea*, *Rumex acetosa*, *Atriplex hortensis* etc.

After calculations, we found that the ratio of the number of medicinal plants used and the size of the settlement showed a moderate relationship ($r = 0.32$). This confirmed the working hypothesis that there were differences in the use of medicinal plants for culinary purposes according to the size of the settlement. The results are statistically significant as $P = 0.002$.

For comparison, a study by Cherneva [20] for the region of the Northern Wetlands states that 43.3% of urban residents and 41% of rural residents use a total of 15 types of medicinal plants for food. This result is significantly different from ours. The result we found can be explained by the larger volume of the present study.

Comparison of medicinal plants usage according to respondents' ethnicity group

The ethnic composition of respondents who use medicinal plants for culinary purposes is rich. It includes all ethnic groups. Among the surveyed 709 local residents, the largest of them is the group of Bulgarians - 628 people (88.58%). Next in size are the groups of Turkish - 23 people (3.24%) and Roma - 37 people (5.22%). With a smaller number of people are represented the groups of Armenians - 9 people (1.27%), Kopanars - 9 people (1.27%) and Tatars - 3 people (0.42%). Of all respondents only two people (0.32%) of Bulgarian ethnicity said they did not use medicinal plants for culinary purposes. In conducting the study, we found some differences in knowledge and usage of some medicinal plants regarding ethnicity of respondents. For example, the use of *Atriplex hortensis* and *Chenopodium album* for food has been described by residents of Kavarna and nearby villages, regardless of their ethnicity. At the same time, the plant is used for food only by the Roma ethnic group in the towns of Beloslav and Aksakovo. *Anthriscus cerefolium* and *Amaranthus sp.* are used for food only by Kopanari people, residents of Aksakovo. Representatives of the Romani, Tatar and Kopanari ethnic groups from small settlements more often collect and use wild medicinal plants for culinary purposes. Their knowledge of the usage of medicinal plants for culinary purposes is considerable and well preserved. This fact is probably due to the lower social status and the fact that they live in economically poorer settlements. On the other hand, the diet of these residents is significantly healthier than that of urban dwellers. Ethnic-specific culinary recipes are also observed. This fact means that there are still ethnic groups that have largely retained traditional culinary recipes using medicinal plants.

After analyzing the survey, we found that among all ethnic groups, the use of between 6 and 10 medicinal plants species for culinary purposes prevails (Fig. 8)

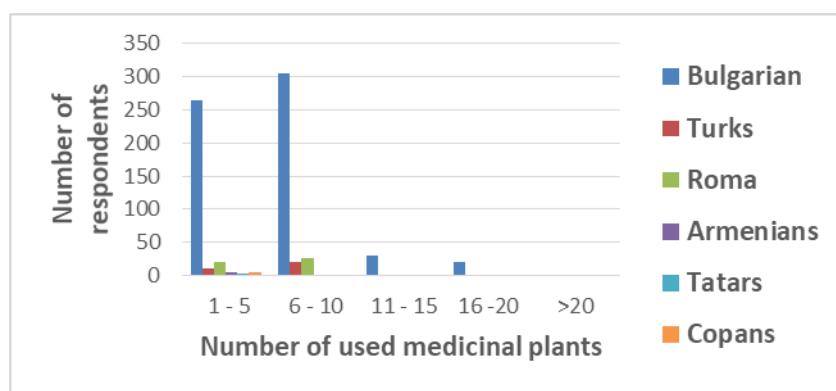


Fig. 8 Distribution of the number of species of medicinal plants usage according to respondents' age group

After correlation analysis, we found that the dependence of ethnicity and number of medicinal plants used for culinary purposes had a weak negative relationship ($r = -0.07$). However, the results are not statistically significant ($P = 0.05$).

Comparison of the extent of usage of medicinal plants according to respondents' age group

The age structure of respondents who use medicinal plants for culinary purposes includes all age groups. The two respondents (1.79%) who answered that they do not use medicinal plants for culinary purposes, belong to the age group from 10 to 20. The answers of these respondents are probably due to lack of interest in the ingredients of the food and spices as they do not participate in the preparation of food in the household. Among all age groups, the most common is the use of 6-10 species of medicinal plants, followed by the use of 1-5 species of medicinal plants (Fig. 9).

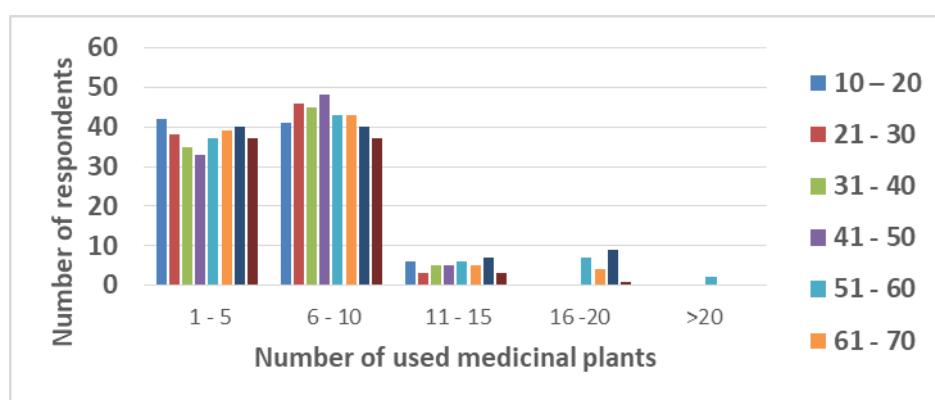


Fig. 9 Distribution of the number of species of medicinal plants usage according to the respondents' age group

In order to establish dependency, a correlation analysis was made between the variable age interval and the number of plants the respondent used for culinary purposes. After correlation analysis, we found a slight negative dependence ($r = -0.02$). Pearson's coefficient shows a result close to 0, which means that the correlation interaction between the two parameters is almost absent. The results are considered statistically significant ($P = 0.03$). Therefore, regardless of their age, respondents use medicinal plants for culinary purposes, taking into account some differences in the species and the way of usage according to the respondent's age. For example, many young people under the age of 20 responded that they do not consume plants such as *Rumex patientia*, *Urtica dioica*, *Rumex acetosa*, *Spinacia oleracea*, but they prefer foods such as *Juglans regia*, *Corylus avellana*, *Chenopodium quinoa*, *Cynara scolymus* etc. There is also a difference in the use of spices regarding respondent's age, which is explained by differences in taste preferences. Respondents over 40 years of age are more likely to use traditional Bulgarian spices such as *Satureja hortensis*, *Capsicum annuum*, *Piper nigrum*, *Trigonella caerulea*, while respondents under 30 years of age prefer spices more characteristic of foreign dishes, such as *Ocimum basilicum*, *Rosmarinus officinalis*, curry. A curious fact is the use of *Ocimum basilicum* as a spice.

Young people often use it to spice up pizzas and spaghetti, while older respondents do not use it as a spice because they associate it with traditional ritual practices. Other authors have reported similar use of basil (Petrov et al., 2018)

Comparison of the extend of usage of medicinal plants according to respondents' gender

A total of 709 local residents of the Northern Black Sea coast region were interviewed and 208 men (99.52%) and 499 women (99.80%) answered that they use medicinal plants for culinary purposes. One man and one woman replied that they did not use medicinal plants. Representatives of both genders most commonly use between 6 and 10 species of medicinal plants, with no significant difference in gender ratio (Fig. 10).

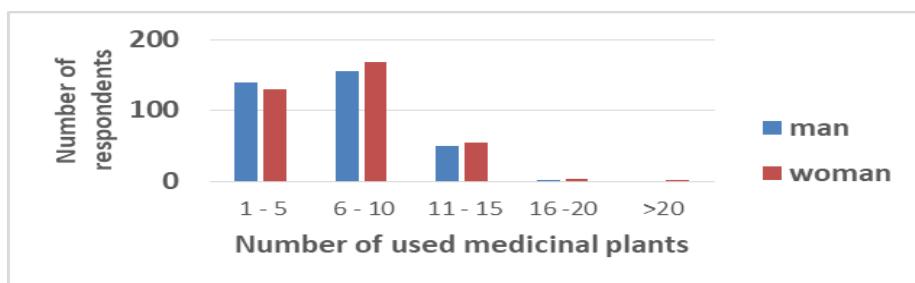


Fig. 10 Distribution of the number of species of medicinal plants usage according to respondents'

Women are expected to use more medicinal plants as food and spice than men. This result is due to the fact that traditionally women prepare food in the household. More answers have been received from men about the use of medicinal plants in the preparation, coloring and flavoring of beverages. This applies mainly to the production of wine and spirits, which is characteristic of men. There are no gender differences in the medicinal plants application as a preservative. Following the correlation analysis, we found a weak positive relationship ($r = 0.08$) in the gender / number of the medicinal plants used ratio. Correlation is weak as the use of medicinal plants for culinary purposes is well expressed in both genders. However, women's use of medicinal plants is higher than that of men. The results are considered statistically significant ($P = 0.004$).

Compared to the Northern Wetlands, Cherneva [20] indicates that 42% of men and 47% of women use medicinal plants for food and spice. The results of the present study show nearly 100% of men and women in the use of medicinal plants for culinary purposes by the local population. This significant difference is due to the fact that Cherneva considers the use of medicinal plants only food and spice, which application is more often used by women in the household.

Comparison of the extent of usage of medicinal plants according to respondents' educational level

According to their educational level the respondents are divided into several subgroups: 14 people without education, 13 people with primary school education, 19 people with middle school education, 365 people with secondary school education and 121 people with higher education. Respondents who do not use medicinal plants for culinary purposes are only two (0.55%) and they have secondary education. People from all kinds of educational background most commonly use between 6 and 10 medicinal plants species (Fig. 11).

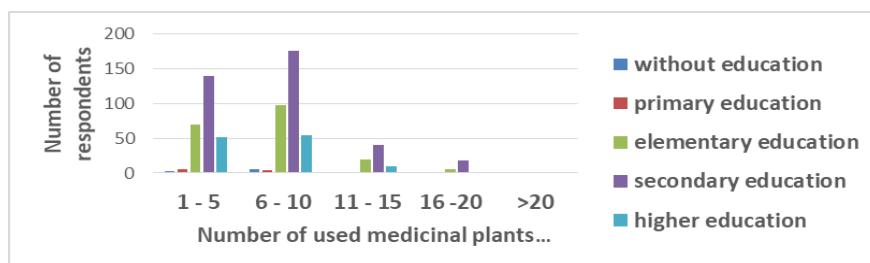


Fig. 11 Distribution of the number of species of medicinal plants usage according to respondents' educational level

Representatives of the Romani, Tatar and Kopanari ethnic groups, as well as older residents of small settlements, are more likely to collect and use wild medicinal plants for culinary purposes. A characteristic of these groups is that they have lower education. On the other hand, young educated people, urban residents, are increasingly turning to healthy eating habits. Often these respondents use wild medicinal plants species for food, but they get them from grocery stores. The knowledge about the use of medicinal plants for culinary purposes is not formed in the educational process. It is either transmitted from older people to younger people, thus preserving the ethnobotanical application of the medicinal plants, or the information is new and obtained from global networks.

After correlation analysis, we found a true positive dependence ($r = 0.09$). The correlation dependence shows a weak relationship, since the use of medicinal plants for culinary purposes is not clearly expressed among representatives with different educational background. The results are statistically significant as $P = 0.01$.

Comparison of the extent of usage of medicinal plants according to respondents' employment status

According to the employment criterion, the largest number of respondents are working - 371 people (52.33%), followed by retirees - 192 people (27.08%), students - 112 (15.80) and unemployed - 34 people (4.79%) The small number of unemployed respondents is probably due to the fact that a large number of locals are seasonally engaged in tourism, and the survey was conducted during the warm months of the year, when most of them work.

The two respondents (1.64%) who said they did not use medicinal plants for culinary purposes, are students. In all groups and by this demographic feature, the most common use is 6-10 and 1-5 species of medicinal plants. It is noteworthy that the number of species used in these 2 groups with the students is similar, respectively 52 and 59 answers (Fig. 12). The reason is that young people are usually not interested in which medicinal plants are used in the household for culinary purposes. The conclusion is that the ethnobotanical knowledge is unpopular among the younger residents of the Northern Black Sea coast region.

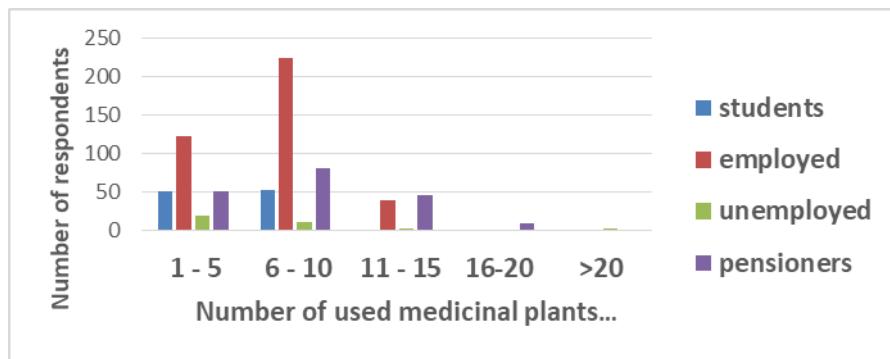


Fig. 12 Distribution of the number of species of medicinal plants usage according to respondents' employment status

The use of medicinal plants for culinary purposes does not depend on the respondents' employment, as evidenced by the correlations made, Pearson's ratio is a number close to 0 ($r = -0.04$). The results are statistically significant ($P = 0.04$).

In this case, we can hypothesize that the use of medicinal plants collected from nature is not determined by the economic benefit of the respondents. Collecting medicinal plants for culinary purposes is most often due to the fact that this food is cleaner and by doing this "I know what I have collected and I know where it is from". Less frequent is the collection of medicinal plants for financial gain. On the other hand, the collection of medicinal plants from nature requires free time that respondents in active age do not have.

Appendix:
Medicinal plants used for culinary purposes

Family	Scientific Name	Bulgarian Name	A	B	C	D	E	F	G	H	I	n = 707, (%)
Amaranthaceae	<i>Spinacia oleracea</i> L.	spanak	4	10	*							204 (28,85%)
Amaranthaceae	<i>Beta vulgaris</i> var. <i>cicla</i> (L.) Voss.	mangold	2	10	*							5 (0,70%)
Amaranthaceae	<i>Chenopodium quinoa</i> Willd.	kinoa	2	13	*							5 (0,70%)
Amaranthaceae	<i>Amaranthus</i> sp.	shtir	1	9	*							14 (1,98%)
Amaranthaceae	<i>Atriplex hortensis</i> L.	loboda	1	9	*							11 (1,56%)
Amaranthaceae	<i>Chenopodium album</i> L.	kucha loboda, karde	1	*	9	*						47 (6,65%)
Amaranthaceae	<i>Beta vulgaris</i> L.	zaharno tsveklo	4	2								5 (0,70%)
Amaranthaceae	<i>Beta vulgaris</i> ssp. <i>vulgaris</i> var. <i>vulgaris</i> L.	cherveno tsveklo	4	2	*	*	*	*				54 (7,63%)
Amaryllidaceae	<i>Allium cepa</i> L.	luk	4	4;9;10	*	*	*	*				406 (57,42%)
Amaryllidaceae	<i>Allium porrum</i> (L.) J.Gay.	praz	4	9;10	*	*						152 (21,49%)
Amaryllidaceae	<i>Allium sativum</i> L.	chesan	4	4;9;10	*	*						397 (56,15%)
Amaryllidaceae	<i>Allium schoenoprasum</i> L.	sibirski luk, div luk	1	*	9;10	*	*					6 (0,85%)
Amaryllidaceae	<i>Allium ursinum</i> L.	levurda, leorda	1	*	10	*	*					52 (7,36%)
Amaryllidaceae	<i>Nectaroscordum siculum</i> ssp. <i>bulgaricum</i> (Janka) Stearn	samardala, div chesan	1	*	9;10		*					121 (17,11%)
Anacardiaceae	<i>Cotinus coggygria</i> Scop.	tetra, smradlika	1	*	8							23 (3,25%)
Apiaceae	<i>Anethum graveolens</i> L.	kopar	1	*	9;10;13		*					496 (70,16%)
Apiaceae	<i>Anthriscus cerefolium</i> Hofm.	manguna, tsiganska manguna, shushan	1	*	9;10	*						8 (1,13%)
Apiaceae	<i>Apium graveolens</i> L.	tselina	4	9;10		*						452 (63,93%)
Apiaceae	<i>Carum carvi</i> L.	kim	4	13		*						39 (5),51%
Apiaceae	<i>Cuminum cyminum</i> L.	kimion	4	13		*						22 (3,11%)
Apiaceae	<i>Coriandrum sativum</i> L.	koriandar	3	*	13	*	*	*				36 (5,09%)
Apiaceae	<i>Daucus carota</i> L.	morkov	1	2		*	*					364 (51,48%)
Apiaceae	<i>Levisticum officinale</i> W.D.J.Koch	devisal, lyustjn	4	9;10		*						122 (17,25%)

Apiaceae	<i>Pastinaca sativa</i> L.	pastarnak	4	2	*		87 (12,30%)
Apiaceae	<i>Petroselinum crispum</i> (Mill.) Hill.	magdanoz	4	9;10	*	*	486 (68,74%)
Apiaceae	<i>Pimpinella anisum</i> L.	anason	4	13	*	*	19 (2,68%)
Asteracea	<i>Artemisia absinthium</i> L.	obiknoven pelin	1	*	9;10	*	24 (3,39%)
Asteracea	<i>Artemisia abrotanum</i> Savi.	bojo dravche	4	9;10		*	31 (4,38%)
Asteracea	<i>Artemisia alba</i> Asso.	byal pelin	1	*	9;10	*	5 (0,7%)
Asteracea	<i>Artemisia annua</i> L.	sladak pelin	1	*	9;10	*	14(1,98%)
Asteracea	<i>Artemisia pedemontana</i> Balb. ex Loisel.	skalen pelin	1	9;10	*	*	13 (1,84%)
Asteracea	<i>Artemisia sp.</i>	pelin	1	9;10		*	29 (4,1%)
Asteracea	<i>Carduus acanthoides</i> L.	magareski bodil	1	*	11	*	16 (2,26%)
Asteracea	<i>Artemisia dracunculus</i> L.	taros, estragon	4	9;10	*	*	18 (2,54%)
Asteracea	<i>Cichorium intybus</i> L.	chkoria, sinja zlachka	1	*	2;11	*	33 (4,67%)
Asteracea	<i>Helianthus annuus</i> L.	slanchogled	4	11;13;16	*		127 (17,96)
Asteracea	<i>Helianthus tuberosus</i> L.	gulija, zemna yabalka, yeralma	4	5	*	*	78 (11,03%)
Asteracea	<i>Matricaria chamomilla</i> L.	layka	1	*	11	*	101 (14,29%)
Asteracea	<i>Taraxacum officinale</i> (L.) Weber ex F.H.Wigg.	gluharche	1	*	10;11	*	59 (8,36%)
Asteracea	<i>Cynara cardunculus</i> var. <i>scolymus</i> L.	artishok	2	11	*		12 (1,69%)
Berberidaceae	<i>Mahonia aquifolium</i> (Pursh) Nutt.	mahonia	4	8		*	2 (0,28)
Berberidaceae	<i>Berberis vulgaris</i> L.	kisel tran	1	*	12	*	1 (0,14%)
Betulaceae	<i>Betula pendula</i> Roth.	breza	1	*	7		1 (0,14%)
Betulaceae	<i>Coryllus avelana</i> L.	leska. leshnik	1	*	7;13	*	419 (59,26%)
Brassicaceae	<i>Armoracia rusticana</i> Gaertn., Mey & Sherb.	hryan	4	2	*	*	46 (0,56%)
Brassicaceae	<i>Brassica oleracea</i> L.	zele	4	10	*		369 (52,19%)
Brassicaceae	<i>Brassica rapa</i> L.	ryapa	4	2	*		111 (15,70%)
Brassicaceae	<i>Sinapis nigra</i> L.	sinap	4	13		*	197 (27,86%)
Brassicaceae	<i>Eruca sativa</i> Mill.	rukola	4	10	*		32 (4,52%)
Caprifoliaceae	<i>Sambucus ebulus</i> L.	baz, bazak,a bazy	1	*	12	*	51 (7,21%)
Caprifoliaceae	<i>Sambucus nigra</i> L.	cheren baz, svirchina	1	*	11;12	*	270 (38,19%)

Convolvulaceae	<i>Convolvulus arvensis</i> L.	povetitsa	1	*	9;10	*		4 (0,57%)
Cornaceae	<i>Cornus mas</i> L.	dryan	1	*	8;12	*	*	352 (49,79%)
Cucurbitaceae	<i>Sechium edule</i> Sw.	chayot, meksikanska krastavitsa	2		12	*		16 (2,26%)
Cucurbitaceae	<i>Cucurbita</i> sp.	tikva	4		12.13	*		99 (14%)
Cupressaceae	<i>Juniperus communis</i> L.	obiknovena hvoina, smrica	3		8		*	1 (0,14%)
Ebenaceae	<i>Diospyros lotus</i> L.	rayska jabalka	4		12	*	*	47 (6,64%)
Ericaceae	<i>Vaccinium uliginosum</i> L.	sinya borovinka	3	*	12		*	1 (0,14%)
Ericaceae	<i>Vaccinium myrtillus</i> L.	cherna borovinka	3	*	12	*		7 (0,99%)
Ericaceae	<i>Vaccinium vitis-idea</i> L.	chervena borovinka	3	*	12	*		3 (0,42%)
Fabaceae	<i>Cicer arietinum</i> L.	nahut	4		13	*	*	52 (7,35%)
Fabaceae	<i>Medicago sativa</i> L.	lutserna	4		9;10	*		2 (0,28%)
Fabaceae	<i>Phaseolus vulgaris</i> L.	bob, fasul	4		13	*	*	289 (40,87%)
Fabaceae	<i>Robinia pseudoacacia</i> L.	akachiya, salkam	4		7;11		*	56 (7,92%)
Fabaceae	<i>Trigonella caerulea</i> (L.) Ser.	sminduh, sminoduh, poy	1	*	9;10;13	*		122 (17,26%)
Fabaceae	<i>Trigonella foenum-graecum</i> L.	sminduh, sminoduh, poy	1	*	9;10;13	*		27 (3,82%)
Fagaceae	<i>Quercus cerris</i> DC.	dab, tser	1		6		*	1 (0,14%)
Fagaceae	<i>Quercus robur</i> Pall.	leten dab	1	*	6		*	3 (0,42%)
Fagaceae	<i>Quercus</i> sp.	dab	1		6		*	63 (8,91%)
Fagaceae	<i>Castanea sativa</i> Mill.	obiknoven kesten	3		13	*		13 (1,84%)
Fagaceae	<i>Fagus sylvatica</i> L.	buk	1	*	10;12	*	*	2 (0,28%)
Geraniaceae	<i>Geranium macrorrhizum</i> L.	zdravets	1	*	10		*	1 (0,14%)
Geraniaceae	<i>Pelargonium roseum</i> Willd.	indrishe, mandrishanka	4		10		*	209 (29,47%)
Ginkgoaceae	<i>Ginkgo biloba</i> L.	ginko	4		10		*	36 (5,09%)
Grossulariaceae	<i>Ribes nigrum</i> L.	kasis	4		12		*	47 (6,64%)
Hypericaceae	<i>Hypericum perforatum</i> L.	zhalt kantarion, kalachevo, pozaritsa, kisikolu	1	*	9;11		*	5 (0,7%)
Juglandaceae	<i>Juglans regia</i> L.	oreh	1	*	10;12;13	*	*	546 (77,23%)
Lamiaceae	<i>Lavandula angustifolia</i> Mill.	lavandula	4		9;11		*	34 (4,80%)
Lamiaceae	<i>Mentha aquatica</i> L.	vodna menta	1	*	9;11		*	41 (5,8%)

Lamiaceae	<i>Mentha piperita</i> L.	menta	4	9;10	*	*	78 (11,03%)
Lamiaceae	<i>Mentha spicata</i> L.	dzhodzen, gyuzum, yuzum, chiriz, naane	1	*	9;10	*	376 (53,18%)
Lamiaceae	<i>Melissa officinalis</i> L.	matochina, limonche	1	*	9;10	*	16 (2,26%)
Lamiaceae	<i>Ocimum basilicum</i> L.	bosilek	4	9;10	*	*	258 (36,49%)
Lamiaceae	<i>Origanum vulgare</i> L.	rigan	1	*	9;11	*	141 (19,94)
Lamiaceae	<i>Rosmarinus officinalis</i> L.	rozmarin	4	9	*	*	88 (12,44%)
Lamiaceae	<i>Salvia officinalis</i> L.	salvia, chay	4	9;10	*		79 (11,17%)
Lamiaceae	<i>Satureja hortensis</i> L.	chubritsa, chubrika	4	9;11	*		399 (56,43%)
Lamiaceae	<i>Satureja montana</i> L.	balkanska chubritsa	3	*	9;11	*	3 (0,42%)
Lamiaceae	<i>Sideritis scardica</i> Griseb.	mursalski chay	3	*	9;11	*	1 (0,14%)
Lamiaceae	<i>Thymus</i> sp.	mashterka	1	*	9;11	*	218 (30,83%)
Lauraceae	<i>Cinnamomum zeylanicum</i> Blume.	kanela	2	6	*	*	158 (14,14%)
Lauraceae	<i>Laurus nobilis</i> L.	dafinov list	2	10	*	*	233 (32,95%)
Linaceae	<i>Linum usitatissimum</i> L.	len	4	13	*	*	79 (11,17%)
Malvaceae	<i>Malva sylvestris</i> L.	slez, kambuleshnik, kambulesh, kamlyak	1	*	11;12	*	6 (0,85%)
Malvaceae	<i>Theobroma cacao</i> Tussac.	kakao	2	13	*		98 (13,86%)
Malvaceae	<i>Tilia platyphyllos</i> Scop.	edrolista lipa	1	*	10	*	2 (0,28%)
Malvaceae	<i>Tilia tomentosa</i> Moench.	srebrolista lipa	1	*	10;11	*	20 (2,83%)
Moraceae	<i>Ficus carica</i> L.	smokinya, taban	1	*	8;10;12	*	301 (42,57%)
Moraceae	<i>Morus alba</i> L.	byala chernitcha	4	7;10;12	*	*	109 (15,41%)
Moraceae	<i>Morus nigra</i> L.	cherna chernitcha	4	7;10;12	*	*	305 (43,14%)
Myrsitaceae	<i>Myristica</i> sp.	indysko orehche	2	13	*	*	72 (10,18%)
Mytraceae	<i>Pimenta dioica</i> (L.) Merr.	bahar	2	13	*		56 (7,92%)
Mytraceae	<i>Syzygium aromaticum</i> (L.) Merr & Perry	karamfil	2	11	*	*	90 (12,72%)
Papaveraceae	<i>Papaver somniferum</i> L.	sanotvoren mak	4	13	*		101 (14,28%)
Pedaliaceae	<i>Sesamum indicum</i> L.	susam	2	13	*		113 (15,98%)
Phytolaccaceae	<i>Phytolacca americana</i> L.	vinoboy	4	12	*		8 (1,13%)

Pinaceae	<i>Pinus nigr</i> Arn.	cheren bor	1	8	*		1 (0,14%)
Piperaceae	<i>Piper nigrum</i> L.	cheren piper	2	13	*	*	436 (61,66%)
Poaceae	<i>Cymbopogon flexuosus</i> Stapf.	limonova treva	4	9;10	*		3 (0,42%)
Poaceae	<i>Hordéum vulgáre</i> L.	echemik, yuchumik	4	13		*	10 (1,41%)
Poaceae	<i>Secale cereale</i> L.	raz	4	13		*	78 (11,03%)
Poaceae	<i>Zea mays</i> L.	charevicha, mamul	4	12;13	*		403 (57%)
Poaceae	<i>Sorghum vulgare</i> var. <i>saccharatum</i> Kuntze.	sorgo	4	13	*		6 (0,84%)
Polygonaceae	<i>Rumex acetosa</i> L.	kiselets	1	*	10	*	67 (9,48%)
Polygonaceae	<i>Rumex patientia</i> L.	lapad	1	*	10	*	609 (86,14%)
Portulacaceae	<i>Portulaca oleracea</i> L.	tuchenitsa, palzyasht shtir, svinski shtir	1	*	9;10	*	47 (6,65%)
Ranunculaceae	<i>Adonis aestivalis</i> L.	goritsvet	1	*	11		*
Rhamnaceae	<i>Ziziphus jujuba</i> Lam.	hinap, finap	2	12	*	*	46 (6,50%)
Rosaceae	<i>Amygdalus communis</i> L.	badem	4	12	*		526 74,39%)
Rosaceae	<i>Aronia</i> sp.	aronia	4	12	*	*	46 (6,50%)
Rosaceae	<i>Crataegus monogyna</i> Jacq.	obiknoven glog	1	*	12	*	50 (7,07%)
Rosaceae	<i>Cydonia oblonga</i> Mill.	dyulya	4	8;10;12	*	*	200 (28,28%)
Rosaceae	<i>Fragaria vesca</i> L.	diva yagoda	1	*	12	*	21 (2,97%)
Rosaceae	<i>Prunus mahaleb</i> L.	mahalebka	1	*	8;12	*	3 (0,42%)
Rosaceae	<i>Malus domestica</i> Borkh.	yabalka	4	12	*	*	563 (79,63%)
Rosaceae	<i>Malus syvestris</i> (L.) Mill.	diva yabalka	1	*	12	*	47 (6,65%)
Rosaceae	<i>Mespilus germanica</i> L.	mushmula	1	12	*		164 (23,2%)
Rosaceae	<i>Prunus armeniaca</i> L.	kaysya	4	12;13	*	*	503 (71,14%)
Rosaceae	<i>Prunus avium</i> (L.) L.	cheresha	4	10;12	*	*	678 (95,89%)
Rosaceae	<i>Prunus cerasus</i> Ledeb.	vishna	4	10;12	*	*	311 (43,98%)
Rosaceae	<i>Prunus cerasifera</i> Ehrh.	dzanka	1	12	*	*	123 (17,4%)
Rosaceae	<i>Prunus domestica</i> L.	sliva	4	12	*	*	478 (67,60%)
Rosaceae	<i>Prunus persica</i> (L.) Batsch.	praskova	4	12	*		297 (42%)

Rosaceae	<i>Prunus spinosa</i> L.	tranka, trankoslivka, kucheshka sliva, shtipni dupe	1	*	12	*	*	*	38 (5,37%)
Rosaceae	<i>Pyrus pyraster</i> Medik.	diva krusha	1		12	*	*	*	74 (10,48%)
Rosaceae	<i>Rosa canina</i> L.	shipka	1		12	*		*	81 (11,46%)
Rosaceae	<i>Rosa damascena</i> Herrm.	kazanlashka roza, trendafil	4		11	*	*		85 (12,02%)
Rosaceae	<i>Rubus sp. diversa</i>	kapina	1		12	*	*	*	144 (20,37%)
Rosaceae	<i>Rubus idaeus</i> L.	malina	4		12	*	*		179 (25,31%)
Rosaceae	<i>Sorbus domestica</i> L.	skorusha, oskrusha	1	*	12	*			6 (0,85%)
Rubiaceae	<i>Coffea</i> sp.	kafe	2		13		*	*	651 (92,07%)
Rutaceae	<i>Citrus aurantifolia</i> (Christm.) M.Hiroe	laym	2		12			*	26 (3,67%)
Rutaceae	<i>Citrus limon</i> (L.) Osbek.	limon	2		12	*	*	*	678 (95,89%)
Solanaceae	<i>Capsicum annuum</i> L.	chushka, piper	4		12	*			542 (76,66%)
Solanaceae	<i>Lycium barbarum</i> Lam.	zhiv plet, merdzhana, godzi beri	4		12	*			6 (0,84%)
Solanaceae	<i>Physalis peruviana</i> L.	fizalis, mehunka	4		12	*			72 (10,18%)
Theaceae	<i>Camellia sinensis</i> (L.) Kuntze.	chay	2		10		*	*	93 (13,15%)
Urticaceae	<i>Urtica dioica</i> L.	kopriva	1		9;10	*			618 (84,41%)
Vitaceae	<i>Vitis vinifera</i> L.	loza, grozde	1		8;10;12	*	*	*	434 (61,39%)
Zingiberaceae	<i>Curcuma longa</i> L.	kurkuma	2		5	*			78 (11,03%)
Zingiberaceae	<i>Elettaria cardamomum</i> (L.) Maton.	kardamon	2		13	*			40 (5,65%)
Zingiberaceae	<i>Zingiber officinale</i> Roscoe.	dzhindzhifil	2		3	*	*	*	125 (17,68)

Legend:

A – Origin; B – The plant included in The Medicinal Plants Act of the Republic of Bulgaria; C – Usable part; D – food; E – spice; F – drink; G – beverage flavoring; H – beverage colorant; I – food preservative; n – number (%) of responses received.

Origin (A): A1 –Plant of the indigenous flora; A2 – Plant of the flora of Bulgaria; A3 – Alien plant for Bulgaria; A4 – Cultivated plant.

Usable part (C): C1 - whole plant; C2 - root; C3 - rhizome; C4 - bulb; C5 - tubers; C6 - crust; C7 - wood; C8 - twig; C9 - stalk; C10 - leaves; C11 - flower; C12 - fruit; C13 - seed; C14 - resin; C15 - juice; C16 – oil.

CONCLUSION

Local residents of the Northern Black Sea Coast region use a significant number of medicinal plants for culinary purposes - 152 species.

In terms of ethnobotanical knowledge about the application of medicinal plants for culinary purposes, local knowledge has largely been preserved and passed on to generations.

In spite of the widespread use of local medicinal plants for food, there are also modern trends in the way of eating based on the use of natural products, as well as the desire of the "urban person" to go back to nature and the sustainable use of natural resources. There is a sort of a revival of "the forgotten old". Urban population starts using some forgotten but characteristic local plant species for food, such as: *Portulaca oleracea*, *Taraxacum officinale*, *Chenopodium album*, *Rumex acetosa*. This trend, combined with global communications, movement of people and the free entry of new herbal products and foreign medicinal plants for Bulgaria, such as *Beta vulgaris var. cicla*, *Sechium edule Sw.*, *Chenopodium quinoa Willd.*, *Cynara cardunculus var. scolymus L.* etc, determines new modern combinations in the use of medicinal plants for culinary purposes. In recent years, there has been an increasing interest in the consumption of wild plants. On the other hand, knowledge of plant biodiversity and the use of medicinal plants is essential for their conservation and preservation, as well as for the safe use of food and herbal products.

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