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TAXONOMIC COMPOSITION AND USE DIRECTIONS OF THE GENUS THYME (*Thymus* L.) DISTRIBUTED IN THE NAKHCHIVAN AUTONOMOUS REPUBLIC

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ТАКСОНОМИЧЕСКИЙ СОСТАВ И НАПРАВЛЕНИЯ ИСПОЛЬЗОВАНИЯ РОДА ТИМЬЯН (*Thymus* L.), РАСПРОСТРАНЕННОГО В НАХЧЫВАНСКОЙ АВТОНОМНОЙ РЕСПУБЛИКЕ

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Abstract. In the flora of the Nakhchivan Autonomous Republic, the Lamiaceae family includes the genus *Thymus*, which includes the most common aromatic species in the world. The chapter is characterized by 135 species in 31 genera. In Azerbaijan, there are 16 species of this genus, and in the Nakhchivan region — 7 species. *Thymus* L. — species of the genus *Thymus* are found in different areas of the mountain belt. The species included in the genus are used as medicinal, ecological, economic, food and spice plants. Taking all this into account, the study of the taxonomic composition of the genus thyme and the directions of its use is recognized as a relevant topic. The authors draw conclusions about the prospects for using the species.

Аннотация. Во флоре Нахчыванской Автономной Республики семейство яснотковых включает род тимьян (*Thymus*), включающий в себя наиболее распространенные в мире ароматические виды. Раздел характеризуется 135 видами в 31 роде. В Азербайджане встречается 16 видов этого рода, а в Нахчыванском регионе — 7 видов. *Thymus* L. — виды рода тимьян встречаются в разных зонах горного пояса. Виды, входящие в род, используются как лекарственные, экологические, хозяйственные, пищевые и пряные растения. Учитывая все это, изучение таксономического состава рода тимьян и направлений его использования признано актуальной темой. Авторы делают выводы о перспективах использования видов.

Keywords: *Thymus* L., taxonomic structure, genus, species.

Ключевые слова: *Thymus* L., таксономический состав, род, вид.

The Nakhchivan Autonomous Republic stands out for its nature, diverse biogeographic features and rich ecosystems. The region is a combination of mountain, desert and semi-desert

landscapes. The flora of the region has a deep historical origin, has undergone a complex natural-historical process of development and has reached its current state, undergoing changes from time to time as a result of various physical and anthropogenic impacts.

In the flora of the Nakhchivan Autonomous Republic, the *Lamiaceae* family includes the genus *Thymus*, which includes the most common aromatic species in the world. The chapter is characterized by 135 species in 31 genera. In Azerbaijan, there are 16 species of this genus, and in the Nakhchivan region — 7 species. *Thymus* L. — species of the genus *Thymus* are found in different areas of the mountain belt. The species included in the genus are used as medicinal, ecological, economic, food and spice plants. Taking all this into account, the study of the taxonomic composition of the genus thyme and the directions of its use is recognized as a relevant topic.

Research material and methodology.

The research was conducted in various areas of the Nakhchivan MR in 2023-2024.

Literary sources, factual data obtained during field research were named as the main research material, and thyme species were taken as the object of the study. The designation of species, clarification of their names and changes in nomenclature are based on the works of A. M. Askerov "Plants of Azerbaijan" [2] and "Flora of Azerbaijan" [11].

Recent taxonomic changes were verified using World Flora Online (<https://www.worldfloraonline.org/>).

Discussion and conclusions of the research

In the flora of the Nakhchivan Autonomous Republic, *Thymus* L. is one of the genera with a diverse species composition. The genus *Thymus* contributes to an increase in biodiversity and ecosystem sustainability. There are 16 species of this genus in Azerbaijan, and 7 species in the Nakhchivan region. The systematic composition of the species included in the genus, ecological groups, range, flowering and fruiting phases are given in the table below (Table).

Table

TAXONOMIC COMPOSITION OF SPECIES OF THE GENUS *Thymus* L.

<i>Species name</i>	<i>Environmental groups</i>	<i>Area class</i>	<i>Flowering and fruiting phase</i>
<i>Thymus karamarjanicus</i> Klok. & Schost.	Xerophyte	North Atropatan	V-VII
<i>Thymus migricus</i> Bieb.	Xerophyte	Northern Iran	VI-VIII
<i>Thymus collinus</i> Bieb.	Xerophyte	Caucasus	VI-VIII
<i>Thymus rariflorus</i> C.Koch	Xerophyte	Asia Minor	VI-VIII
<i>Thymus nummularius</i> Bieb	Mesophyte	Caucasus-Colchis mountain	VI, VIII, IX
<i>Thymus kotschyanus</i> Boiss. & Hohen.	Xerophyte	Front Asian mountain	VI-VII
<i>Thymus transcaucasicus</i> Ronn.	Xerophyte	Unknown	VI-VIII

Since external environmental conditions are constantly changing, water is an important ecological factor in the distribution of plants over large areas in different climatic conditions and the formation of different groups. Thus, such changes affect each species differently, and they themselves can change the environment.

Mesophytes occupy an intermediate position between hygrophytes and xerophytes in relation to moisture and its needs. Mesophytic plants are represented mainly by forest, shrub, subalpine, alpine plants and are more common. When analyzing the ecological groups of species included in the genus, it was found that the species *T. nummularius* is a mesophyte.

Xerophytic species include plants common in arid areas. Xerophytes are mainly found on southern slopes, which are hotter and less humid. Species of the genus *T. karamarjanicus*, *T. migricus*, *T. collinus*, *T. rariflorus*, *T. kotschyanus* and *T. transcaucasicus* are xerophytic plants.

Based on the literature sources used and our own field studies, the genus species were assigned to different range classes, which allows us to determine the migration routes of the species to the territory. The analysis of the species of the genus *Thymus* L., common in the study area, was carried out according to 6 range classes according to zonal and regional principles. It is known that the species is widespread in Northern Atropatena, Northern Iran, the Caucasus, Asia Minor, and in the mountainous regions of the Caucasus-Colchis. The range class of the species *T. transcaucasicus* is unknown (Figure 1).

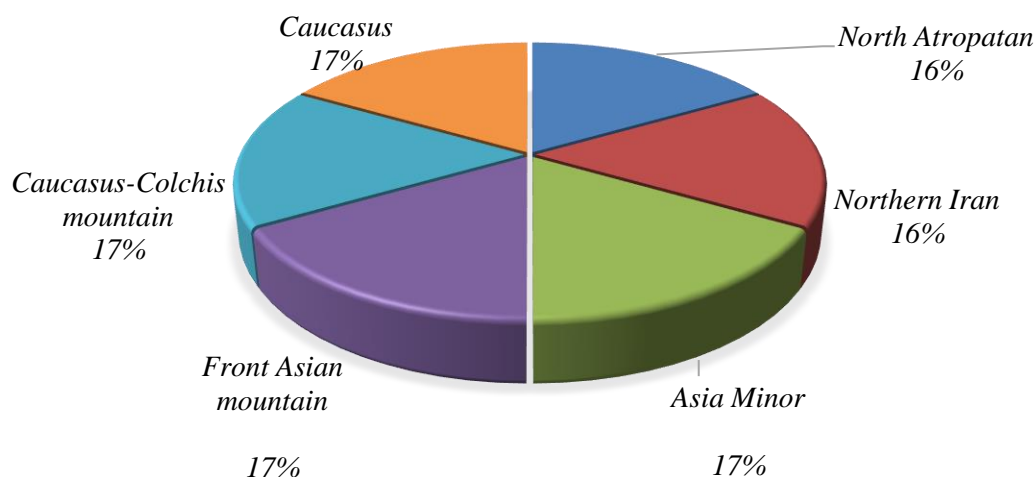


Figure 1. Ranges of *Thymus* L. species

Thymus L. is a subshrub plant, the leaves are completely bordered, rarely serrated. The calyx is cylindrical or bell-shaped, with two lips, the lower lip is divided into two parts, the upper lip has 3 teeth. The mouth of the calyx is rigidly pubescent. The crown has two lips of purple, lilac or white color, the upper lip is grooved, the lower is three-lobed. It has 4 males.

The species *T. kamarajanicus* is common in rocky areas of the middle mountain belt. The species plays an important role in medicine, food industry, cosmetics and beekeeping.

The species *T. migricus* is common in rocky areas of the middle mountain belt. The composition of the species is rich in antioxidants, polyphenols and essential fatty compounds. The plant has potential use in pharmacology and the food industry.

The species *T. kotschyanus* is common in rocky areas of the high mountain zone. In addition to being a spice, medicinal and ornamental plant, this species has aromatherapeutic properties.

The species *T. transcaucasicus* is common in rocky areas of the mid and high mountain zones. Extracts obtained from the above-ground part of the species have antioxidant, antimicrobial and antiviral properties. The plant is also known as an important spice and medicinal species.

The species *T. nummularius* is common in alpine meadows. The aromatic leaves of this species are used as a spice in the kitchen, as a medicine in traditional medicine and as an ornamental plant in gardens.

The species *T. collinus* is common in rocky areas of the middle mountain and subalpine belts. This species is used as an ornamental plant in gardens and as a culinary spice. It is also used to treat digestive problems, respiratory problems, and skin diseases (Figure 2).

The species *T. rariflorus* is common in rocky areas of the mid-mountain zone. This species is a rare flowering plant containing medicinal, spicy and essential oil compounds, used ingardens as an ornamental plant and in the treatment of antimicrobial diseases.

In the flora of the Nakhchivan MR, which is the study area, xerophytic vegetation is of great importance for the conservation of biological diversity, ensuring the sustainability of the region's ecosystems. This type of plant plays an important role in increasing soil fertility and ecosystem circulation [12, 21].

Nakhchivan has a rich flora, unique climate and geographical location. The vegetation in the region forms diverse groups with a wide variety of grass, shrub and tree species, as well as numerous endemic and rare species. The ecosystem is dominated by groups formed by different herbaceous plants. These groups are closely related to climate, soil type, water resources and biotic factors. Thus, in the study areas, species included in the genus form groups of different forms with plants belonging to other families [1, 8, 20, 22, 23].



Figure 2. *Thymus collinus* M. Bieb.

Regardless of the studied environment, herbaceous plants in all areas closely interact with species of a number of families and form different groups [9, 10, 14].

Complex forests and shrubs are ecosystems in which different plant species are found. In these forests, there are complex interactions between herbaceous plants, shrubs and trees. Grasses have a significant impact on the dynamics, structure and functions of these ecosystems. The dominant species in active phytocenoses are legumes, mallows, rosaceae and many other families [3-7, 13, 15-18].

Thus, it does not fully reflect the directions of use of species belonging to the above-mentioned genus *Thymus* L. In our further studies, we consider it appropriate to comprehensively study all the features of the studied species.

Conclusion

1. In the course of the conducted research it was concluded that 7 species of the genus *Thymus* L. were found in the flora of the Nakhchivan Autonomous Republic. It was established that 3 species included in the genus are decorative, 1 type is cosmetic, 1 type is spicy, 1 type is beekeeping and all species are medicinal.

2. In the analysis of ecological groups of species included in the genus, it was established that 6 species of the genus are xerophytic and 1 species is mesophytic. According to the analysis of geographical classes of the range, 1 species of the genus is Northern Atropatene, 1 species is Northern Iran, 1 species is the Caucasus, 1 species is Asia Minor, 1 species is Caucasian-Colchis-Mountain and 1 species is unknown.

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