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USAGE PERSPECTIVES OF SPECIES BELONGING TO THE *Alchemilla* L. GENUS IN THE *ROSACEAE* JUSS. FAMILY IN THE FLORA OF THE NAKHCHIVAN AUTONOMOUS REPUBLIC

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ПЕРСПЕКТИВЫ ИСПОЛЬЗОВАНИЯ ВИДОВ РОДА *Alchemilla* L. СЕМЕЙСТВА *ROSACEAE* JUSS. В ФЛОРЕ НАХЧЫВАНСКОЙ АВТОНОМНОЙ РЕСПУБЛИКИ

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Abstract. Previous studies have allowed us to determine important characteristics characteristic of significant species of the genus Alchemilla L. in the flora of the Nakhchivan Autonomous Republic. Species of this genus are widely represented in Azerbaijan. The issue of practical use of species of the genus Alchemilla L. is considered. The characteristics of the main species and their use in medicine and as ornamental plants are given. The analysis of already published data on flora and assessment of the state of vegetation of the Nakhchivan Autonomous Republic is presented.

Аннотация. Проведенные ранее исследования позволили определить важные характеристики, характерные для значимых видов рода *Alchemilla L.* во флоре Нахичеванской АР. Виды этого рода широко представлены в Азербайджане. Рассматривается вопрос практического использования видов рода *Alchemilla L.* Дана характеристика основных видов и их использования в медицине и в качестве декоративных растений. Приведен анализ уже опубликованных данных по флоре и оценке состояния растительности Нахичеванской АР.

Keywords: Alchemilla L., medicinal plants, phytotherapy, ornamental species.

Ключевые слова: Alchemilla L., лекарственные растения, фитотерапия, декоративные виды.

The Nakhchivan Autonomous Republic is a typical mountainous region with a captivating nature, rich flora, and plant cover. Its geographical location, relief features, soil, and climate factors have contributed to the formation of plant cover, which is considered one of the region's primary natural resources. The region has formed through the combination of mountainous, steppe, and semi-desert landscapes. The flora of the autonomous republic begins with the relatively polymorphic *Rosaceae* family, with species of this family playing a special role. Plants from the *Rosaceae* family are widely spread in nature, and the family contains more than 3,000 species. In Azerbaijan, up to 195 wild species from 29 genera are found. In the Nakhchivan AR, it is

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characterized by 153 species from 30 genera. The genus *Alchemilla L.* has a unique position due to its broad utilization areas and species diversity. Among the useful plants in the flora of the Nakhchivan Autonomous Republic, the species of the genus *Alchemilla L.* are especially significant. Based on numerous research studies and literature, it has been found that species from this genus are used as medicinal, food, and forage plants, as well as ornamental plants. Additionally, it has been discovered that these species are also used in phytoremediation measures.

The study of the species of the genus *Alchemilla L.* is of scientific and practical significance for identifying the species spread in the flora of the Nakhchivan Autonomous Republic and investigating the potential uses of these species. Therefore, it is essential to conduct research in this direction [24].

Material and research methods

During the study, commonly accepted floristic, geobotanical, bioecological methods, as well as phenological observations, were used. The primary research materials included literature sources, and actual data obtained from field studies, with the research area being selected from various regions of the republic. Literature references to materials of the *Alchemilla* genus in the research area include works [2-23].

In identifying and clarifying the names of species from the *Alchemilla L.* genus, works such as "Flora of Azerbaijan", "Flora of the Caucasus", and "The Plant World of Azerbaijan" [1, 12, 13] were used. Recent taxonomic changes were based on the World Flora Online (https://about.worldfloraonline.org/).

Discussion and conclusions of the study

Among the economically significant plants in the flora of the Nakhchivan Autonomous Republic, species belonging to the genus *Alchemilla* have a special role. Based on the analysis of literature data and personal field research materials, 22 species of the *Alchemilla L.* genus are found in Azerbaijan, and 13 species are recorded in the Nakhchivan AR. The taxonomic spectrum of these species and their usage directions are presented in the following table (Table).

Table

USAGE DIRECTIONS OF SPECIES BELONGING TO THE *Alchemilla* L.

Species distributed in the Nakhchivan AR	*Medicinal*	*Food and fodder*	*Ornamental*	*Phytoremediative*
Alchemilla vulgaris L.	+	+	+	+
A. epipsila Juz.	+			
A. erythropoda Juz.	+	+	+	+
A. grossheimii Juz.	+	+	+	+
A. orthotricha Rothm.	+		+	+
A. persica Rothm.	+	+	+	+
A. raddeana (Buser) Juz.	+	+	+	
A. retinervis Buser	+			
A. sedelmeyeriana Juz.	+	+	+	+
A. sericata Rchb. ex Buser	+		+	
A. sericea Willd.	+		+	
A. smirnovii Juz.	+			
A. venosa Juz.	+			

As revealed by our research, species belonging to the *Alchemilla* L. genus, which are distributed in the flora of the Nakhchivan Autonomous Republic, play an important role as

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medicinal plants in both modern and traditional medicine. As shown in the mentioned table, all species of this genus have a special significance as medicinal plants. Plants of the *Alchemilla* genus have been used in traditional medicine since ancient times. Various species, especially those beneficial for women's health, are known to be highly effective. It is particularly known that this plant helps to regulate hormonal balance. Some people use these plants to treat various ailments, such as intestinal problems, stomach pain, constipation, and headaches.

Representatives of the *Alchemilla* genus are used in cities and villages for medicinal purposes, where tea or infusions are prepared and consumed internally. In addition, they can also be used in the treatment of skin and facial diseases, particularly in cases of skin inflammations and rashes. Branching plants are widely used in folk medicine, especially for the treatment of asthma, bronchitis, wounds, and snail problems. These plants are utilized through preparations of infusions or decoctions. The compounds present in the plants enhance their phytochemical properties. Studies conducted on the species reveal new information about their antioxidant and phytochemical benefits. The bioactive substances in the plant strengthen the body's immune system and increase its resistance to diseases.

Food-important species hold a special place in the flora of the Nakhchivan Autonomous Republic. Many plants found in the wild have been studied by humans over time and are cultivated as food-important species. Food plants are not only a product of nature but also an object of human labor. These species occupy a central role in both phytocenoses and agrocenoses, being used for various purposes, which are partially determined by humans according to their diversity of formation, distribution, and systematic status. Species belonging to the branching genus, such as *Alchemilla amicta, A. erythropoda, A. grossheimii, A. persica, A. raddeana, and A. sedelmeyeriana*, are widely used for food and fodder purposes. The primary purpose of all ornamental plants is to enhance beauty. In decorative plant cover, herbaceous plants hold a special place alongside trees and shrubs. Many species of the Alchemilla L. genus are used as ornamental plants due to the color and structure of their flowers. Among the decorative species of this genus, *Alchemilla amicta, A. erythropoda, A. grossheimii, A. orthotricha, A. persica, A. raddeana, A. sedelmeyeriana, A. sericata*, and *A. sericea* play a significant role.

Branching species are also valuable plants from an aesthetic perspective. With their beautiful green leaves and flowers, they can be used as ornamental plants in gardens and natural landscapes. These plants beautify the environment and create harmony with various plant covers. Species of the *Alchemilla* genus, such as *Alchemilla amicta, A. sedelmeyeriana, A. persica, A. orthotricha, A. grossheimii*, and *A. erythropoda*, play an important role in natural ecosystems. These plants are widely used in erosion control plantings. They prevent soil erosion and help in water purification. Additionally, they provide habitats for various insects and other small organisms.

As seen in the image, research has shown that 13 species of the *Alchemilla* L. genus are found in the flora of the Nakhchivan Autonomous Republic. It has been determined that medicinally important species dominate, constituting 38% of the total plants, decorative species make up 26%, plants used for food and fodder purposes account for 18%, and phytoremediation plants represent 18%. Thus, the above-mentioned information does not fully reflect the various uses of the species belonging to the Branching genus. In future research, it is considered appropriate to study all the characteristics of the investigated species of the genus in a comprehensive manner. As a result of conducted research, the systematic composition of species belonging to the *Alchemilla* L. genus in the *Rosaceae* family in the flora of the Nakhchivan Autonomous Republic has been studied, and it has been found that 13 species of the genus are present in the research area. In the flora of the Nakhchivan Autonomous Republic, 13 species of the *Alchemilla* L. genus are of special importance,

with 13 species used as medicinal plants (38%), 9 species as ornamental plants (26%), 6 species for food and fodder purposes (18%), and 6 species as phytoremediation plants (18%).

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