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DISTRIBUTION, CHEMICAL COMPOSITION AND NUTRITIONAL SIGNIFICANCE OF *Vicia elegans* Guss. ON THE ELEVATED PLAIN BATABAT

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РАСПРОСТРАНЕНИЕ, ХИМИЧЕСКИЙ СОСТАВ И КОРМОВАЯ ЦЕННОСТЬ *Vicia elegans* Guss. НА ПЛАТО БАТАБАТ

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Abstract. The territory of Nakhchivan Autonomous Republic of the Republic of Azerbaijan is rich in fodder plants. Despite this, pastures and hayfields in livestock farms are not used for their direct purpose. This, naturally, negatively affects the development of livestock breeding. As is known, plants of legume family are rich in nitrogen. Animals grazing regularly in these areas develop various gastrointestinal tumours when eating the wet mass of the plant. For this purpose, legumes should be used as dry feed. During 2024, studies were conducted to investigate the forage and chemical composition of Vicia elegans Guss species, including its distribution. Starting from early spring months, pastures and hayfields on the territory of the Batabat plateau were surveyed, and the use of the species '*Vicia elegans* Guss' in animal husbandry was studied. During the study, the ratio of dry matter and protein in leaves and stems of the plant collected from the Batabat plateau was determined.

Аннотация. Территория Нахчыванской Автономной Республики богата кормовыми растениями. Несмотря на это, пастбища и сенокосы в животноводческих хозяйствах не используются по прямому назначению. Это, естественно, негативно оказывается на развитии животноводства. Как известно, растения семейства бобовых обогащают почву азотом. У животных, регулярно пасущихся в этих районах, при поедании влажной массы растения возникают различные желудочно-кишечные опухоли. Для этого следует использовать бобовые в качестве сухого корма. В течение 2024 года проводились исследования по изучению кормовой ценности и химического состава вида *Vicia elegans* Guss. и включая его распространение. Начиная с ранней весны, проводились обследования пастбищ и сенокосов на территории Батабатского плато, а также изучалось использование в животноводстве этого вида. В результате лабораторных анализов было определено соотношение сухого вещества и белка в листьях и стеблях этого растения собранного с плато Батабат.

Keywords: Vicia elegans Guss, forage plant, protein, dry matter.

Ключевые слова: Vicia elegans Guss, кормовое растение, протеин, сухое вещество.

The territory of Nakhchivan Autonomous Republic is very rich in fodder plants. The majority of species of fodder importance belong to the legume family. Among the plants of legume family *Vicia* genus occupies one of the main places by its application and importance. On the territory of

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Nakhchivan Autonomous Republic 25 species of genus *Vicia* are known.

One of the most common species in the Bababat Plateau area where we conducted our research is *Vicia elegans* Guss. Young fruits of this species contain a sufficient amount of vitamin C. In particular, the seed (grain) contains protein, hydrolysed carbohydrates, fat, crude ash and fibre. The fat and dry matter of the *Vicia elegans* Guss plant play an important role in the diet of animals. This plant is used in industry to produce high quality casein glue that meets modern standards. It is widely used in the production of fabrics, plywood and plastics.

Research materials and methodology

In 2024, we conducted studies of the species *Vicia elegans*, widespread in the flora of the Nakhchivan Autonomous Republic. In order to determine chemical composition of species and directions of use, "Methodological instructions on geobotanical studies of natural fodder lands of Azerbaijan" [1], research work of A. Sh. Ibrahimov on "Natural fodder base of Nakhchivan Autonomous Republic [11], its current state and protection", as well as the works of Prilipko [30], Serebryakov and a number of other literature sources were used in botanical analyses of the identified species [31]. The last taxonomic changes were made on the basis of World Flora Online (https://www.worldfloraonline.org/).

Discussion and conclusions of the research

As a result of the conducted research, per 100 kg of oily mass of the *Vicia elegans* Guss contains 19 feed units, 45.6 feed units in dry grass mass, 21 in silage, and 26.7 units in dry vegetative mass. Like all legumes, *Vicia elegans* Guss is considered the best precursor because it fixes free nitrogen from the air with the help of bacteria in its roots.

Vicia elegans Guss belongs to the genus Vicia. It is a tetrahedral plant with a slender, straight stem up to 60-75 cm tall, which spreads as it grows. The stem branches from the lower part of the plant. The leaves are pinnate. Its fruits are legumes. The flowers consist of 5 sepals, 2 fused, 3 free petals, 9 fused, 1 free stamen and one pistil. The roots are very strong. The tuber is rich in bacteria. It is extremely widespread in pastures and meadows of the Batabat Plateau. It accounts for about 55-60 % of the forage mass of hay and pastures.

Goats eat *Vicia elegans* Guss better than cattle, sheep and goats, both in dried and raw form. This also leads to an increase in goat population in the area. Also, due to its high nutritional and feed value, the plant is widely used in dairy and beef farming. It has been observed that due to thickening of the stem, it is not well eaten by animals.

Plant samples collected during the full flowering period of *Vicia elegans* Guss and were fed to cattle, sheep and goats in wet and dry form to determine the palatability of the forage. The observations concluded that goats started to eat more.

Assessing the *Vicia elegans* Guss plant as a whole, it can be assumed that the presence of possible secondary metabolites in the green part of the plant alters its palatability. For this reason, animals avoid eating wet food. In this respect, eating the plant in dry form as feed is more useful and important. There are no substances that impair the flavour of dried plants, except for the coarseness of the veins in the stem.

It was found that the mass fraction of leaves of *Vicia elegans* Guss during the period of full flowering was 53.16%, stem — 32.75%, flowers — 14.09%. The dry matter content of leaves, stems and flowers were: 23.21%, 27.06% and 20.25%. Crude protein content was 12.34% in whole plant, 17.39% in leaves, 4.64% in stem and 11.65% in flowers.

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Figure. *Vicia elegans*

The leaf surface of the *Vicia elegans* Guss plant has an advantage over other parts of the plant. This also increases the feeding value of the plant.

Table

FEEDING QUALITIES OF THE *Vicia elegans* Guss., %

Plant bodies and their ratio	*Dry matter*	*Raw protein*
leaf	53.16	23.21	17.39
stem	32.75	27.06	4.64
flower	14.09	20.25	11.65
whole plant	100,0	22.35	12.34

Since forage vegetation occupies large areas in the Nakhchivan Autonomous Republic, cattle farming, including sheep and goat breeding, is widespread here. In this regard, spontaneous use of pastures and hayfields is inevitable. Both dry and wet masses of pastures and hayfields should be protected. The sowing phases of important forage plants on hayfields should be taken into account. As we know, most herbaceous plants reproduce by seeds. We, in turn, must first of all protect the seeds in our fields and pastures. That is, after the plants have produced seeds, the fields must be mown and the pastures must be grazed. In this way, we not only provide animals with adequate nutrition, but also create conditions for the spread of plant seeds.

Xerophytic vegetation of the Nakhchivan MR research area creates an ecosystem that ensures sustainability of life in the dry climate of the region. These plants contribute to the stability of the ecosystem. Xerophytic plants play an important role in protecting the environment in drought conditions and ensuring sustainable agricultural development. The xerophytic ecosystem of Nakhchivan is an important resource that forms the basis of both natural life and economic development [13, 22].

The herbs in the flora of Nakhchivan have created unique groups in various ecosystems in close connection with the climatic and geographical conditions of the region. In the desert, semi-desert and mountainous areas of the region, herbaceous plants are widespread and form various plant groups adapted to climatic conditions. The main function of these plants is to cover the soil, prevent erosion, support local fauna and create a favorable environment for local agricultural activities [8, 10, 20-24].

Regardless of the studied area, herbaceous plants in all territories closely interact with species of a number of families and form different groups [9, 15, 25-29].

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One of the special biotic groups of the Nakhchivan flora is the forest-shrub complex herbaceous ecosystems. This complex grows in mountainous and foothill areas, covering ecosystems consisting of a mixture of forest and shrub cover. The cultivated complex is formed as a result of the interaction of different plant species. In addition to forest and shrub plants, herbaceous plants are widespread in these territories, forming a complex ecosystem. These ecosystems provide important support to the local flora and fauna and at the same time play a key role in maintaining the ecological balance. Thus, in the forming phytocenoses, the dominant species are plants belonging to *Fabaceae*, *Malvaceae*, *Rosaceae* and many other families [3-7, 14, 16-19, 32].

Thus, it does not fully reflect the directions of use of the above-mentioned species of the genus *Vicia elegans* Guss. In our fu rther research, we consider it appropriate to comprehensively study all the features of the studied breed.

Conclusion

As a result of the conducted research, it has been found that the plant "*Vicia elegans*", which is widespread in the flora of the Nakhchivan Autonomous Republic, can be used as a fodder plant for grass production.

We have determined that the *Vicia elegans* species has 19 feed units per 100 kg of fat mass, 45.6 in dry grass, 21 in silage, and 26.7 in dry vegetative mass.

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