

Ecological Groups of *Astracantha* and *Astragalus* Species of Nakhchivan Autonomous Republic

DASHGIN GANBAROV
Assistant professor
Nakhchivan State University
Azerbaijan

Abstract:

There have been investigated ecological groups of Astracantha and Astragalus species in the article. It has been studied that Astracantha and Astragalus species mezophit plants are 9(10,6%), mezocserophits 9 are (10,6%) and cseromezophits are 29 (34,1%), cserophits take greater place - 44,7 % (38 species) totally.

Key words: astragalus, astrcantha, genus, species, ecological, biological, factor

Introduction

Water has great importance as an ecological factor on spreading of the plants in large areas and in different climate zones, on formation of different groups. Plants separate into different ecological group according to their acclimatization to the humidity of different areas.

Material and Method

Classification of plants based on the ecological-phytosenological and domination principles and also we based on the works of following authors as A.R. Shennikov [1], B.A. Bikov [3],

A.G.Voronov [3], Y.M. Lavrenko [4], R.D. Yaroshenko [5] and others.

Experimental Part

Cserophit species are the plants of the dry areas and have acclimatized to the lack of humidity. In the hot and dry climate zones they spread much and have different species. The plants that have spread in the desert, dry field, thorny thin forest and rocky areas belong to this group. In the more humid regions the cserophits grow in the sunny and less humid southern mountain slopes.

Water deficiency of the dry area plants is possible within two cases. Firstly lack of water in the soil at the result of the less rainfall, the second reason is the fast evaporation of water at the result of the dry and high temperature. From this point lack of humidity within the drought area plants can be regulated by different ways: by sucking much amount of water from the soil, by reducing the evaporation and by increasing hardiness against much waste of water. All these features are the results of adaptation of cserophits to the dry environment. But different plants have different hardiness degrees. According to this point some authors show two main ways of hardiness of cserophits against the drought: rising of hardiness of the seeds or active regulation of water balance and hardiness against drying.

Cserophits are divided into some groups according to the regulation of water balance and structural peculiarities. Different structural peculiarities of cserophits have great importance on lack of humidity. Their root systems have developed greatly to suck humidity from the soil. The root systems of the cserophits are larger than the over soil parts. The root systems of the cserophits are mainly of extensive type- thus some plants cover much soil and have less ramified long roots. Having such kind of long roots provide chance for the

cserophits to get water from the very depth of the soil or from the subterranean waters. Some species have larger ramified roots in order to use the soil humidity in maximum amount. Considerable changes against water deficiency are watched on over soil parts of cserophits. For reducing the water waste such kinds of plants gain the following defensive characteristics and structural peculiarities:

1. Reducing of the transpiring surface. Some cserophit plants have small, narrow, thorny or scale shaped and strongly redacted leaves.
2. To have transforming tissues with thick walls in order to prevent high amount of water evaporation on leaves. Sometimes leaves are covered with thick hair or with other defensive peculiarities that save the leaves from heat and prevent the water waste.
3. Strong growth of the mechanical tissues. As the size of cells of leaf tissues in cserophits is small and thick so the mid-cell spaces are weak developed. It reduces the evaporating surface of the leaf and thanks to this peculiarity water evaporates in small amount.

Thanks to the peculiarities shown above and adaptation to the water deficiency cserophits can grow in lighter and drier areas. We can show for example *Astracantha karabagchensis*, *A. microcephala*, *A. vedica*, *A. stenonychioides*, *A. meyeri*, *Astragalus ammophilus*, *A. aduncus*, *A. arguroides*, *A. campylorrhynchus*, *A. candolleanus*, *A. corrugatus*, *A. longicuspis*, *A. nachitschevanicus*, *A. paradoxus* etc. Among the *Astracantha* and *Astragalus* species the cserophit natured species have more positive peculiarities than other ecological natured species. On average 37 species out of 84, to say the truth 44,7% of both species include into cserophits. According to their humidity need mezophits can be replaced between cserophits and hydrophytes. Mezophit plants are mainly spread in the forests, bushy areas, alp and subalp areas, nival and

subnival areas. But they have spread less among the *Astracantha* and *Astragalus* species. *Astracantha insidiosa*, *A. oleifolia*, *Astragalus cicer*, *A. glycyphylloides*, *A. glycyphyllos*, *A. goktschaicus*, *A. polygala*, *A. falcatus* and other species are included into the mezophits. According to the influence of the environment the mezophit plants have gained different ecological features. On the other hand lack of humidity and periodical water deficiency increases hardness of some mezophits and makes chance for them to get adapted to the existing ecological condition. These plants take a middle place between mezophit and cserophit plants and they are called cseromezophit and mezocserophit plants. Some of these plants are of mezophit origin. They get adopted to the ecological condition, have cserophit lifestyle and are called mezocserophit plants. *Astragalus finitimus*, *A. alpinus*, *A. sevangensis*, *A. prilipkoanus*, *A. cornutus*, *A. badamliensis*, *A. aznabjurticus*, *A. ordubadensis* and others are included into the mezocserophit types. Originally being cserophits but by the ecological condition having mezophit lifestyle plants are called cseromezophits. *Astracantha karjaginii*, *A. aurea*, *Astragalus asterias*, *A. choicus* and others are included into the kseromezophit species.

Table 1 Ecological groups of *Astracantha* and *Astragalus* species according to A.P.Shennikov (1964)

№	Ecological groups	<i>Astracantha</i> and <i>Astragalus</i>	
		Number of species	Total number by percent
	Cserophits	38	44,7
	Cseromezophits	29	34,1
	Mezocserophits	9	10,6
	Mezophits	9	10,6
Total :		85	100

As seen from the table among the *Astracantha* and *Astragalus*

species mezophit plants are 9(10,6%), mezocserophits 9 are (10,6%) and cseromezophits are 29 (34,1%), cserophits take greater place - 44,7 % (38 species) totally.

BIBLIOGRAPHY

- Bikov, B.A. 1949. "Edificatirs of plant formation of the Soviet Union." *News of the ÀS USSR*, 3: 53-61 [2]
- Lavrenko, E. M. 1947. "Methods of studying of underground parts of fitoseneses." *Botany journal* 32(6): 68-74 [4]
- Shennikov, A.P. 1964. *Introduction into the geobotanics*. Leningrad Publishing House. Leningrad Institute, 447 [1]
- Voronov, A.G. 1973. *Geobotany*. M.: Higher school. p. 205. [3]
- Yaroshenko, P.D. 1946. "About the terms of vegetation cover." *Botany journal*. Ì.-L.: Publishing house, ÀS USSR 31: 29-40 [5]