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Ecological groups of woody species of the *Rosaceae* family spreading in the flora of the nakhchivan autonomous republic

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Abstract
The article provides information about the ecological groups of woody species of *Rosaceae* family spreading in the flora of Nakhchivan AR. Spreading of the woody species of *Rosaceae* family plants by ecological groups was carried out according to Shennikov's classification system. It was determined that mesophytes 43 (47%), mesoxerophytes 23 (25%), xeromesophytes 8 (9%), and xerophytes 17 species make up 19% of the woody species of the general *Rosaceae* family.

Keywords: ecological groups, woody species, classification system, ecological factors, external environment

1. Introduction
The influence of environmental factors causes organisms to adapt to specific living conditions in the process of evolution. They show signs of adaptation to reduce the impact of the unfavorable factor. Environmental factors have a complex effect on the body. Tolerance for one factor sometimes depends on the level of the other factors. Due to the constantly changing external environmental conditions, water is an important environmental factor in spreading of plants over large areas in different climatic conditions and formation of different groups. Such a change affects each species in different ways and can change their environment. The organisms' need for humidity depends on all seasons of the year and their habitat. Therefore, they have evolved physiologically to maintain a constant level of water in the body.

Materials and Methodology
In 2018, the study of woody species of the Rosaceae family began in the territory of Nakhchivan AR. The works of RD Yaroshenko [5], AR Shennikov [4], Volkov IV, [1, 2]. YM Lavrenko [3]. and other researchers were used in the classification of vegetation based on the principles of ecological-phytocenological, dominance. The article has been compiled on the basis of information obtained as a result of route and stationary observations conducted in the research area, analysis and determination of material and comparative analysis of the literature materials.

Discussion and Results of the Research
Due to their need for water, various plants are divided into Several ecological groups. Spreading of woody species of the Rosaceae family by ecological groups in the Nakhchivan AR was carried out according to Shennikov's classification system. Due to their attitude to humidity and their needs, mesophytes have an intermediate position between hygrophytes and xerophytes. Mesophytic plants are mainly forest, shrubbery, subalpine and alpine plants and have spread much more.

These plants differ not only in the number of species but also in different ecological characteristics under the influence of various factors and under the influence of the natural nutrient environment. Mesophytic woody species of the *Rosaceae* family are mainly forest and shrubbery plants. Mesophytic forms predominate among this group of plants due to their spreading in the forest areas. Mesophytic species spread in areas with varying degrees of humidity. Woody mesophyte species of *Rosasea* family spread in the forest areas, near rivers and springs and swamps. These plants especially spread in the depths of the forests.

Mesophytic species *Pyrus syriaca, P. pseudosyriaca, P.zangezura. P.caucasica, P. nutans. Malus orientalis, Crataegus cinovscisii, C.monigyna, C.pentagyna. C.curvisepala, C. sanguinea, Mespilus germanica, Rosa corymbifera. R. nisami, Padellus mahaleb, Prunus wallicata, Sorbus aucuparia, S. boissieri. S. graeca. S. turcica, Cerasus incana, Spiraea crenata*, etc. Mesophytic plants also differ in the number of species composition and various ecological characteristics under the influence of the natural nutrient environment. Due to their water requirements, mesophytes have an intermediate position between hygrophytic plants and xerophytic plants.

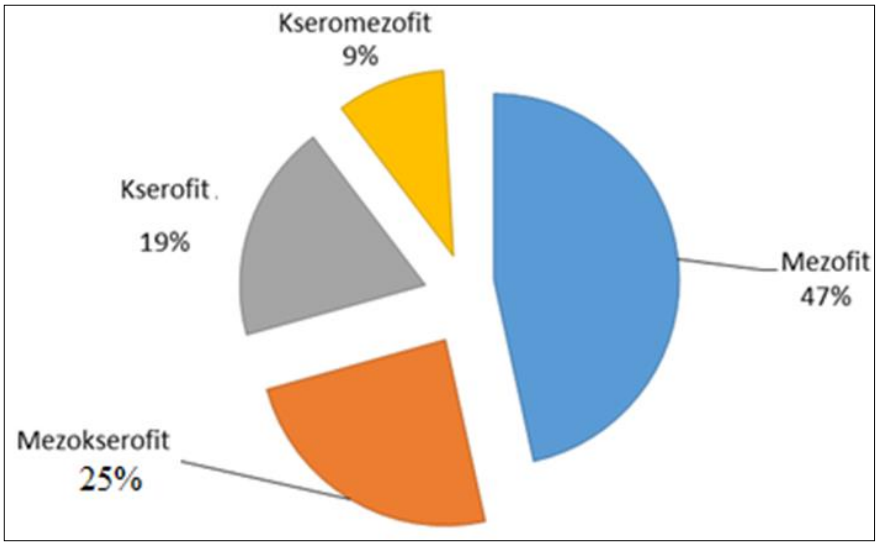

Fig 1: Ecological groups of woody species of flowering family

A number of plants have acquired various ecological characteristics under the influence of the nutrient environment. On the other hand, lack of humidity and periodic water shortages increase the physiological resistance of some plants to water shortages in various ways, causing them to live in appropriate environmental conditions in existing areas. These plants are called mesoxerophytes and xeromesophytes, occupying an intermediate position between mesophytes and xerophytes. Some of these plants, basically mesophytes, are called mesoxerophytic plants when they adapt to the environment in which they live and lead a relatively xerophytic lifestyle.

Mesoxerophytes have spread much more in humid areas in comparing with xerophytic plants and in drier areas in comparing with mesophytes. Due to spreading areal, these plants take the second place among the woody species of Rosaceae family plants. These species are mainly found in forest openings, forested shrubberies, north-western and north-south slopes of mountain slopes. Mesoxerophytes are 23 species and make up 25% of the total woody species of the Rosaceae family. These plants include *Crataegus meyeri, C.pontica. C. szowitsii, C. pseudoheterophylla, C. caucasica, Rosa buschiana. R. pulverulenta, R. sosnovskyana, R. sachokiana, R. tuschetica. Pyrus raddeana, P. georgica* and other species.

Fig 2: Spiraea hypericifolia

Xeromesophyte plants occupy an intermediate position between xerophytic plants and mesoxrophytes. Due to their spreading, these plants come after xerophytes among woody *Rosaceae* family plants. They are mainly found in forest steppes and sparsely shrubbery areas, and especially in the north-western and south-western slopes of mountains. Xeromesophytes, of which there are 8 species, make up 9% of woody *Rosaceae* family. Xeromesophytic woody species of the Rosaceae family include Rosa haemisphaerica, Sorbus luristanica, etc.

Xerophytic species belong to plants that spread in dry areas. Xerophytes are mainly found on the warmer and least humid southern exposure slopes.

For xerophytes, the diversity of their structures against humidity deficiency is important. Root systems are strongly developed to absorb moisture from the soil. The deeper penetration of such roots allows xerophytes to use moisture from deeper soil layers and, in some cases, groundwater. In some species, the root system is highly branched to make maximum use of soil humidity. The xerophytic woody species of the *Rosaceae* family include *Cotoneaster suavis, Amygdalus fenzliana, A. nairica, Rosa hracziana, Rosa orientalis, Pyrus oxyprion* and others. These species make up 19% of the 17 species of woody *Rosaceae* family. Xerophytic species are especially more found in southern dry areas and rocky areas.

Fig 3: Amygdalus fenzliana

Light, temperature and soil factors are also abiotic factors that play a very important role in the life of woody species of Rosaceae family plants. Just as the geographical spredaing and ecological conditions of plants are closely related to the light regime, changes in temperature also create condition for many morphological adaptations in plants. In the temperate zone, changes in temperature and light during the year lead to seasonal changes in plant life. Changes in the value of various environmental factors create conditions for the formation of various processes in plant life.

Optimal vital activity of plants is observed at optimal values of environmental factors. If any of the factors that make up the condition, acquires a value that is too low or too high, then the influence of other factors is limited and at last, the result of the plant's movement in the environment is determined. Therefore, the presence of factors at the minimum (or maximum) level and the presence of their limiting effect (optimization of the environment) is as important in the life of woody *Rosaceae* family as in all plants.

Conclusion

According to the analysis of ecological groups of woody species of *Rosaceae* family spreading in the flora of Nakhchivan AR, mesophytes are represented by 43 (47%), mesoxerophytes 23 (25%), xeromesophytes 8 (9%) and xerophytes 17 species (19%)

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