VEGETATIVE PROPOGATION OF SOME ONION VARIETIES INSTRUMENTED IN DRY SUBTROPICAL CONDITIONS OF ABSHERON

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Abstract: The article studies the vegetative propagation of wild species of the genus *Allium* L., introduced from the flora of Nakhchivan into the dry subtropical conditions of Absheron. In the course of the research, the coefficient of vegetative propagation of some studied species was determined. According to the results obtained, the species A. *schoenoprasum* has the highest coefficient of vegetative reproduction. The species A. *materculae* and A. *leucantum* are distinguished by a very low coefficient of vegetative propagation. The vegetative propagation coefficient of most of the studied onions ranges from 1.71-3.2.
Keywords: *Allium L.*, wild species, introduction, dry subtropical conditions, vegetative propagation, reproduction rate.

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Introduction:

It is known that Absheron is one of the most important regions of Azerbaijan. Economic development in this region has caused some problems. The increase in the number of enterprises also affects the biological environment. The destruction of plants causes new problems. Therefore, it is necessary to study the factors influencing the biological environment and control the processes. It is known that the number of people living in Absheron is increasing. An increase in population leads to an increase in the anthropological factor. These factors also cause biological problems. To prevent them, it is important to grow plants, create gardens and create parks. It is known that the different soil cover on Absheron creates difficulties in growing many plants. Therefore, studying the possibilities of growing plants in this region is one of the main areas of research in biological science.

Vegetative propagation plays an important role in plant life (Kestre & Khartmann, 2002; Levina, 1964; Lyubarskiy, 1967; Shalit, 1960). The study of vegetative propagation of plants has not only theoretical, but also practical significance. In order to obtain mass planting material (in landscaping, agriculture), to preserve the purity of species and varieties (in fruit growing, horticulture), it is important in all respects to know the features of vegetative propagation. Of great importance is the study of the method of plant propagation, including vegetative propagation of rare and endangered plants by elements of various plant groups. When introducing plants, vegetative propagation is of particular importance (Mazurenko & Khokhryakov, 1971; Tukhvatullina, 1999, 2003, 2006). Thus, under the conditions of a new introduction, plants often reproduce only vegetatively.

A very common method of natural vegetative propagation of onions is the formation of several axillary buds in the leaf

axil. These shoots become independent bulbs. When the leaves of the mother plant dry out, they become detached from the mother plant and can then develop on their own.

Vegetative propagation is also possible by dividing the clump formed by the plant. In nature, vegetative propagation in rhizome bulbs is observed when some parts of the rhizome dry out, as a result of which several young individuals are formed from the grown mother bush. This method is especially often used when growing perennial bulbs, since in this case reproduction occurs faster.

Under cultural conditions, onion development occurs quite quickly, flowering and fruiting are observed almost every year. Natural vegetative propagation is observed in many rhizomatous species in our collection. Most types of onions can be propagated by dividing rhizomes, rhizomes, bulbs, and aerial bulbs.

From this point of view, one of the important issues is the study of the biological characteristics and vegetative propagation of *Allium L.* species growing in the flora of Nakhchivan MR and introduced into the dry subtropical conditions of Absheron. This work is devoted to the study of plants growing in Absheron. During the research, vegetative propagation of wild species of the genus *Allium L.* introduced from the flora of Nakhchivan into the dry subtropical conditions of Absheron was studied.

Research Methods:

Extensive research was carried out on Absheron to study the vegetative propagation of wild species of the genus *Allium L.* At this time, standard methods used to study plants in certain conditions were applied. The research was carried out at the Central Botanical Garden (Baku, Azerbaijan) in 2010-2017. The object of the study was 25 species of wild onions of the Nakhchivan flora. The ornamental properties of plants were assessed according to the methodology adopted by breeders when assessing ornamental herbaceous plants (Kestre & Khartmann, 2002; Levina, 1964).

Vegetative propagation was studied using the method of M.S. Shalit (Shalit, 1960). We assessed the vegetative propagation of wild onions under cultural conditions and determined the reproduction coefficient.

Results and Discussions:

Most onion species introduced from the natural flora of Nakhchiva into the dry subtropical conditions of Absheron reproduce both by seeds and vegetatively. However, some species of onion are an exception (*A. caeruleum*) because they produce bulblets (aerial bulbs) rather than seeds and therefore only reproduce vegetatively. Seed propagation of the species *A. pseudoampeloprasum* and *A. caeruleum* in the dry subtropics of Absheron during the research period was not successful, since they do not produce seeds. The main way of vegetative regeneration of onions is the formation of a replacement bulb. It continues the life of the plant vegetatively. Note that if replacing the bulb is the only way of regeneration, then the coefficient of vegetative propagation is equal to one (only one bulb is formed in place of the destroyed bulb) and the number of plants does not increase. But this is rarely observed.

Some types of onions can also be propagated artificially by cutting off the lower part of the bulb or dividing the bulb into two parts, in which case two young plants are obtained from one bulb. In addition, in the floral group of some "flowering" onion species (*A. caeruleum*), small bulbs called bulbs (aerial bulbs) are formed along with the flower, giving rise to a new plant. In many bulbs, any disturbance in the formation of the flower leads to the formation of bulbs. This can be achieved artificially by carefully cutting off the buds from the axis of the flower. This is another way of vegetative propagation of onions.

Natural vegetative propagation was observed in most rhizome species in our collection. During the researches, it was determined that it is possible to reproduce most types of onions by dividing the rhizome, root, bulb, bulb. Among the onion species we have introduced are those that have lost sexual reproduction and are only propagated vegetatively with aerial bulbs and underground bulbs.

During the research, we evaluated the vegetative propagation of onions under culture conditions. For most species, multi-year otra numbers were used during the introduction experiments. As a result of observation during the year, the average figures obtained on the vegetative reproduction of onions are given in table 1.

Table 1. Vegetative propagation of onions under introduction conditions.

Number	Type	Numbder of generative shoot	Vegetative propagation coefficient
1	*Allium callidictyon*	1,04 (1)	1,53 (1-3)
2	*A. lacerum*	2,07 (1-4)	2,30 (1-5)
3	*A. dictyoprasum*	1,52 (1-3)	1,79 (1-3)
4	*A. scabriscapum*	1,06 (1)	2,05 (1-3)
5	*A. affine*	1,91 (1-3)	2,47 (1-4)
6	*A. fuscoviolaceum*	1,09 (1-2)	3,58 (2-8)
7	*A. caeruleum*	1,00 (1-2)	4,66 (2-10)
8	*A. waldsteinin*	1,30 (1-2)	2,80 (1-8)
9	*A. materculae*	1,24 (1-2)	1,03 (1-2)
10	*A. pseudoflavum*	5,09 (3-9)	6,01 (3-11)
11	*A. rubellum*	1,47 (1-3)	1,42 (1-3)
12	*A. pseudoampeloprasum*	1,00 (1)	1,50 (1-3)
13	*A. mariae*	1,23 (1-2)	2,36 (1-5)
14	*A. viride*	2,05 (1-4)	2,59 (1-5)
15	*A. paczoskianum*	2,17 (1-4)	1,93 (1-4)
16	*A. cardiostemon*	4,82 (2-8)	4,60 (1-9)
17	*A. kunthianum*	1,84 (1-2)	1,78 (1-3)
18	*A. leucanthum*	1,06 (1-2)	1,21 (1-2)
19	*A. atroviolaceum*	1,07 (1-2)	1,36 (1-2)
20	*A. vineale*	3,65 (1-7)	2,70 (1-5)
21	*A. woronovii*	1,65 (1-3)	1,71 (1-4)
22	*A. rotundum*	1,03 (1)	1,54 (1-2)
23	*A. schoenoprasum*	9,20 (6-15)	10,23 (4-17)
24	*A. szovitsii*	1,07 (1)	1,56 (1-3)
25	*A. akaka*	1,33 (1-2)	1,75 (1-4)

Conclusion:

The data obtained as a result of the research are shown in Table 1. From the data given in the table, it is clear that *A. schoenoprasum* has the highest vegetative propagation rate. It was established that the species *A. pseudoflavum* also reproduces intensively vegetatively. The species *A. materculae* and *A. leucantum* are distinguished by a very low coefficient of vegetative propagation. The coefficient of vegetative propagation of most onion species introduced from the flora of Nakhchivan into the dry subtropical conditions of Absheron was 1.71-3.2.

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