

BIOLOGICAL CHARACTERISTICS OF *ASTRANTIA MAJOR* L. IN *EX SITU* COLLECTIONS

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Introduction

Regularities identified during studying of rare species in *ex situ* collections provide with the opportunity to develop methodological approaches to restore its natural populations. Currently two natural habitats of *Astrantia major* L. in the Republic of Belarus are authentically known. This species belongs to the I vulnerability category (CR) [1] and requires a number of measures to restore natural populations.

Material and methods

Objects of research were plants of *Astrantia major* L. coming into the reproductive period and growing at the collection areal in the Central Botanical Garden of NAS of Belarus (CBG). Seasonal development rhythm was studied by I.D.Yurkevich [2]. Laboratory germination was determined by seed germination at 10 and 24 °C. Field germination established by seeding in the open ground in April, August and October. To create artificial cenopopulation were used plants of *Astrantia major* L. grown in the CBG.

Results and discussions

According to phenological observations spring growth of *Astrantia major* L. begins in the second decade of April, initial budding - in the third decade of May. Mass blossoming lasts about one and a half months since the third decade of June to the first decade of August. Plants grown from seeds expected to bloom in the third (less frequently second) year of life. Seeds mature in August - September. In culture it gives annual sustainable self-seeding. Species differs in longer growing season, while warm and protracted fall secondary regrowth may occur. In this case, the plants with green leaves are covered with snow and freeze out during the winter. It prefers fertile soil. It can grow without rejuvenation up to 10 years. The plant is resistant to diseases and pests.

It spreads both via seed and vegetatively. Seeds don't germinate under laboratory conditions. It was determined that the optimal sowing time for seeds in the soil is late fall planting, which matches with the beginning of sustainable low temperatures. It is necessary to use stratified seeds for spring sowing [3]. Vegetative propagation by division of mature plants is efficient if there are enough mother plantations. To accelerate the entry of plants in the reproductive period it is necessary that each of the divided rhizome has two or three reproduction buds and own roots.

In accordance with the research results of the biological characteristics of *Astrantia major* L. recommendations for the planting material, including closed root system, were developed. Three artificial cenopopulations, one of which has been existing for over ten years, were developed.

Conclusions

Complete cycle of seasonal development, annual bearing, the presence of significant self-seeding, resistance to diseases and pests in *ex situ* collections determine the potential growth opportunities of *Astrantia major* L. as planting material and successful repatriation of the species in natural habitats.

Bibliography

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