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METHODS OF PROPAGATION OF SPIRAEA HUPERICIFOLIA L IN FLORA OF THE TURKESTAN RANGE

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Abstract: Populations of some species of medicinal plants are experiencing increasing anthropogenic impact, and in a number of ecosystems they are on the verge of extinction. Therefore, it is relevant to assess their current state. Spiraea hypericifolia is interesting as a medicinal, ornamental, melliferous and ornamental woody plant.

Keywords: Spiraea hypericifolia, flower, method, plant.

INTRODUCTION

It is a rather valuable medicinal plant. In Turkestan medicine, roots, bark and leaves are used for gastrointestinal diseases, rheumatism, helminthiasis, gynecological diseases, and in traditional Turkestan medicine for the treatment of dermatoses [2]. The antibacterial and antioxidant activity of leaf juice has been established [3]. At least 31 components were identified in leaf extracts, including 6 flavonoids, 4 of which were identified as hyperoside, isoquercitrin, avicularin and rutin [4].

MATERIALS AND METHODS

To develop a strategy for sustainable resource use of S. hypericifolia, it is necessary to analyze the ontogenetic structure, which is an information indicator of the state of the species in communities in a specific territory.

St. John's wort spirea (species Spiraea hypericifolia L., genus Spiraea, family Rosaceae Juss.) is a deciduous shrub, 0.5–1.5 m tall, with erect and curved branches (Trees; 1954). It grows wild in the forest-steppe and steppe zones of Turkestan.

RESULTS AND DISCUSSION

Shrub 0.5–1.5 (2) m. Leaves oblong-elliptic or lanceolate, 10–25 mm long, wedge-shaped narrowed towards the base into a short petiole (up to 5 mm), obtuse or sharp at the apex, entire or on sterile edges - running, with 2–3 (5) teeth at the top. The flowers are white, 5–8 mm long, on pedicels, 5–15 mm in numerous sessile umbels of few flowers. Calyx with wide-angle teeth. The leaflets are erect, smooth or short-haired in the upper part along the ventral suture.

Spiraea hypericifolia is a typical steppe plant, forming thickets together with other shrubs in open habitats in shrubby or shrubby rocky steppe. The study area is dry and continental (the amount of precipitation varies from 480 to 507 mm, the average annual temperature is from 0.7 to 0.9°C). Spiraea grows in the form of a “geoxyl” shrub with a height of 0.37 to 1.01 m with crown projections of 0.06–0.81 m2 and its volume from 0.01 to 0.24 m3. Correlation analysis revealed that the morphological parameters of spirea depend on the vitality of the plant, i.e. the higher the vitality, the larger the crown projection area ($r=0.64$; $P<0.05$) and its volume ($r=0.53$; $P<0.05$). The density of coenopopulations was established from 466 to 1733 specimens per 1 hectare, while the more individuals, the fewer flowering plants are found ($r = -0.86$; $P < 0.05$). The vital condition indicator varies from severely damaged (32%) to moderately weakened

individuals (72%) and it is closely related to the density and number of generative individuals in the coenopopulation. The higher the vitality, the more flowering shrubs ($r=-0.80$; $P<0.05$) with fewer individuals ($r=-0.94$; $P<0.05$).

Postgenerative individuals are present in only one cenopopulation – Imangulovskaya. Of the five cenopopulations studied, four are normal with a discontinuous spectrum. They do not contain fractions of post-generative (2-5 CP), old generative (3-5 CP) or juvenile (1-5 CP) and immature individuals (1-2 CP, 5 CP). Only one cenopopulation, Imangulovskaya, has a complete spectrum. In all studied cenopopulations, the age spectra are single-vertex left-sided with a maximum in virginal (1 CP) and young generative (2-5 CP) individuals. Of particular importance for diagnosing the state of cenopopulations are the restoration and replacement indices. If they are less than 1, then the state of the coenopopulation is close to critical [13].

In this case, procurement of medicinal raw materials will lead to a reduction in the area of this coenopopulation and even to its disappearance [1]. All cenopopulations have a restoration and replacement index less than 1 (the Kurgashevskaya cenopopulation is an exception). Those. All spirea habitats are unstable, which indicates their weak renewal in these habitats, and any negative anthropogenic factor (grazing, fire, procurement of raw materials, etc.) can lead either to the extinction of the spirea coenopopulation or cause significant damage. The efficiency index changes slightly (0.59–0.81). According to the “delta-omega” classification of L.A. Zhivotovsky [12], the studied cenopopulations were divided into three groups: maturing, young and transitional (Fig.). The Kurgashevskaya cenopopulation is classified as young, since most of its individuals have not reached the generative state. The Imangulovo cenopopulation belongs to the transitional type. The remaining spirea coenopopulations have a maturing type. This suggests that reproduction occurs in almost all coenopopulations, due to which Spiraea persists in the studied communities.

CONCLUSION

It has been statistically established that with a decrease in the number of individuals in the coenopopulation, illumination increases and the number of flowering plants with high vitality increases. As a result of the integral analysis, of all cenopopulations, two can be distinguished - Urgunovskaya and Kalkanovskaya, which are in the most favorable habitat conditions. However, an assessment of the state of spirea in the studied areas showed that the existence of these coenopopulations is due to instability and weak reproduction (recovery and replacement indices are set to less than 1), and any negative anthropogenic factor can lead either to the death of the spirea coenopopulation or cause significant damage. Observation of the processes of self-healing and changes in the ontogenetic structure of cenopopulations makes it possible to propose measures to preserve their stability.

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