

**AGE STRUCTURE OF COENOPOPULATIONS  
OF *PATRINIA SIBIRICA* (VALERIANACEAE) IN SOUTH URAL**

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**SUMMARY**

*Patrinia sibirica* (L.) Juss. is a perennial grass from Valerianaceae family. It grows in Altai, East Kazakhstan, Eastern Siberia, the Far East. It is a rare plant of the South Urals; rare species of Bashkortostan flora, it is referred to the III category of rarity — ararespecies. It grows on rocks, stony and detritus slopes of mountains and in the mountain tundra. The species has medicinal properties. Studying of biological features of *P. sibirica*, structure and state of natural coenopopulations was the research objective. In 2013—2014 examination of east, macroslope of the South Urals in northern part of Zauralie of Bashkortostan Republic was conducted, and 8 coenopopulations were studied. Studying of age structure of populations was carried out by standard techniques. The criterion «delta omega» L. A. Zhivotovsky's, based on sharing of indexes of age (D) and efficiency (w) was applied to assessment of state of coenopopulations. Study of morphometry in nature conditions was carried out according to V. N. Golubev's method. The assessment of vital composition was carried out according to Yu. A. Zlobin. The static and multidimensional analysis was carried out by MS Excel 2010 and by software package Statistica 6.0 using standard indicators for 8 samples. The phenotypic distance as Makhalanobis's distance was calculated by discriminant analysis. Area of *P. sibirica* in the South Urals covers bald peaks of central part of the Ural Mountains and the forest-steppe foothills of east macroslope. All studied populations of species were small, fragmented, numbered not more than 100—150 individuals, and in certain populations was less than 50 individuals. The general density in the coenopopulations of *P. sibirica* varied from 1.2 to 6.5 ind./m<sup>2</sup>, effective density was 0.9—2.8 ind./m<sup>2</sup>. In the most populations the generative fraction prevailed. The average age spectrum of *P. sibirica* was centered with a maximum on middle-aged generative individuals; plants of all age states, except a senile state were presented in it. The age structure of specific coenopopulations of *P. sibirica* had two types of a spectrum: left-side, centered. The assessment of age D (delta) and efficiency w (omega) showed that three coenopopulations were young, two were transitional, and two coenopopulations were senescent. According to the most parameters of both vegetative and generative spheres the Shahtnaya coenopopulation leaded, the minimal values were noted in Starobalbukovo coenopopulation. The number of generative shoots is the most variable parameter, other parameters have normal degree of variability. The minimal variability of many characters was noted in Shahtnaya coenopopulation. The assessment of phenotypic similarity of individuals in coenopopulations of *P. sibirica* showed that average values of squares Makhalanobis distances of individuals from the center of population varied in the range from 6 to 15. Individual plants are phenotypically similar in the most of coenopopulations. It allows to assume a hypothesis of possible fragmentation of single population of *P. sibirica* in the isolated loci. In four coenopopulations individuals of the highest class prevailed, and they were referred to prospering, two populations to equilibrium, two to depressive.

Key words: *Patrinia sibirica*, rare species, the South Urals, coenopopulation, age state, morphometric parameters, variability, vitalitet.