

## Short Reports

## STRUCTURE OF ASTRAGALUS SULCATUS L. (FABACEAE) POPULATIONS

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The article provides data on ontogenetic structure of natural populations of *Astragalus sulcatus* L. (*Fabaceae*) that is rare in steppe and forest-steppe areas of Russia. Numbers of specimen can vary by years, populations can be nature or aged normal incomplete with interrupted one-peak right-side ontogenetic spectre.

Preservation of vegetative surface requires a careful study of specific specimen among rare kinds of plants. Such works obtain a special importance in formation of regions' Red book. A significant number of kinds require protection in Samara region [1–4]. Variety of the flora in this region is defined by its location in two natural areas – steppe and forest-steppe.

We have undertaken a study on population structure of *Astragalus sulcatus* L. (*Fabaceae*, *Leguminosae*, *Papilionaceae*). During the work we used population-ontogenetic methods of collecting and processing data that have become traditional and are based upon discrete description of ontogenesis among model specimen and definition of vitality among specimen and natural populations. Ontogenesis of this astragal was studied in Penza region (Russia) [5]. The kind is widely spread in Europe, Siberia, Middle and Central Asia. It is a many-ears grassy plant scape-root plant. Protected in certain regions of Russian Federation (for example, Voronezh, Samara, Tambov region). Majority of populations count a small number of specimen. Grows in meadow and steppe communities on various types of soils (from salted to carbonate). Emergence of germs is complicated by presence of solid rind on seeds [1, 5].

It has been established that in terms of low strain or lack of it *A. Sulcatus* is presented in mature normal incomplete populations with interrupted single-peak centered specter with maximum at mature generative plants (31%). No senile specimen were registered in populations. Generative core is presented among 76% of specimen. Anthropogenic transformation of soil-vegetative surface provides for transition of population to aging normal incomplete with interrupted single-peak right-side specter with maximum at aged generative specimen (35%). Besides, as in the previous case, left part of ontogenetic specter (from germs to virginile condition) falls out completely. Generative specimen are presented among 86% of samples. Basic ontogenetic specter for the studied cenotic populations is also incomplete with prevalence of mature generative specimen (about 40%), a high position is occu-

ried by plants with aged generative group (almost 24%), generative core forms about 78%. Germs and juvenile plants were not registered in the studied populations, and it is explained by transience of ontogenetic condition, catastrophic death among young specimen, and period of observation (July–August). No doubt, additional research on astragal population will be required at the moment of teenager emergence from seed bank. Spatial location of specimen in kind populations is random, plants can be distanced significantly from each other, large accumulations of specimen were not registered.

During the period of observing natural populations, we have established that number of kind specimen varies in years; the following factors limit development of specimen and their populations: ploughing of territories, hay cutting, steppe fires, unlimited cattle pasture, and also special features of ontho- and morphogenesis; populations of kind with low vitality level and prevalence of generative specimen, reproduction of specimen is insufficient to sustain permanent numbers in populations, specimen density is low; in separate seasons specimen do not fixate, obviously, being in idle condition.

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## THE INFLUENCE OF THE HORMONES OF EPIPHYSIS TO THE REPRODUCTIVE SYSTEM

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Epiphysis is a small endocrine gland in the vertebrate brain. Also it known as pineal gland, also