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BIOECOLOGICAL FEATURES OF COLLEMBOLA IN THE CONDITIONS OF THE REPUBLIC OF KARAKALPAKSTAN

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ANNOTATION
The article discusses the features of springtail biology in the conditions of the Republic of Karakalpakstan. Collembola are animals belonging to the Collembola group, a class of insects (Insecta) of the phylum Arthropoda. All their representatives, together with shell mites and insects, form the soil microfauna.
KEY WORDS: *process, microflora, organism, agrocenosis, ecosystem, soil.*

At present, the determination of the species composition of organisms actively involved in the processes of soil formation and increase in soil productivity, affecting biological and ecological properties, is considered one of the most important tasks. Therefore, much attention is paid to the development of modern methods for identifying soil organisms common in various agrocenoses, the study of natural ecosystems and their ecological properties in agrocenoses, and the establishment of patterns of communities of organisms that increase soil productivity.

In the work of soil organisms, springtails are distinguished by the fact that they are of great importance in increasing the humus content of the soil. In particular, the indicator property of the springtail is of particular importance in determining the ecological crisis in anthropogenic areas, and the system for assessing the state of agrophytocenoses by their ecological properties can increase the efficiency of the system for assessing agrophytocenoses in agricultural fields where agriculture is intensively carried out.

Therefore, it is of great scientific and practical importance to determine the abundance of springtail species growing in natural ecosystems and various soils of agrocenoses, to study their ecological properties, and to reveal the role of springtails in increasing soil productivity and in diagnostics.

Collembola - animals belonging to the group Collembola, a class of insects (Insecta) of the phylum Arthropoda. All their representatives, together with shell mites and insects, form the soil microfauna. Collembola or arthropods (Collembola) - one of the most important groups of terrestrial animals, the remains of which were found in the strata of the Middle Devonian. Each joint of the mustache of an arthropod has its own muscles; legs do not divide into calves and feet, spermatozoa do not have additional tubules and external fibers, body division is complete, embryonic membranes are absent, fertilization is external-internal, molting continues after puberty.

Due to skin respiration, the cover of their body does not have an epicuticular layer and does not resist the evaporation of the skin. Springtails are a diverse group, distinguished by a number of characteristic morphological structures. First of all, the presence of a jumping difference in the 4th segment of the abdomen is characteristic of the locomotor organ; in the third segment of the abdomen is attached with kisses; the presence of an abdominal tube that provides adhesion to the substrate after the jump. The sense organs of Collembola are also characteristic: post-antenal, antennal, etc. [3].

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Springtails are considered the most important generation of arthropods that have evolved in arid environments. Their body is covered with hard chitinous cuticle. The epicuticle prevents the body from drying out by preventing water saturation outside the cuticle. They are very widespread and diverse due to the fact that they are very resistant to adverse conditions. Species grown in a tropical climate can withstand heat up to +400 C. There are especially many of them in forest soils with low humidity. Invertebrates in bed consume 10-15% of their biomass. During the year, 2-3 sets of springtails develop. Due to differences in distribution over the soil layer, springtails are divided into groups that form in the bed, bed-soil and soil.

The body is carpet-crested, dark in color and covered with a thick shell. Collembola belonging to this group are saprophagous springtails. The body of soil-dwelling species is pale, and the body cover is somewhat thin, so they are sensitive to soil moisture. In the case of floor soil types, the interval between these two groups is calculated. Springtails are very picky about food.

They can be divided into groups that feed on true plants, herbs, spores, pollen, herbs, aquatic plants. Collembola actively absorb humus and mineral components of the soil. Under favorable conditions, it penetrates to a depth of up to 1 m. Among them, the active participation of springtails in the process of soil formation was confirmed [3].

The number of Collembola is 1 million per 1 m2 of the soil layer .. The average size of all springtails is 1 mm, the largest are 0.2-0.7 mm long, and the largest are 5-9 mm. The fact that their body is divided into three parts is similar to typical flies. They are very important for increasing the humus content in the soil. In addition, Collembola, like other microorganisms, play an indicator role in determining environmental damage in anthropogenic areas. For this reason, their study is considered one of the urgent tasks [3].

Their body is divided into three parts. The head has a three-membered thorax with a pair of segmented whiskers, a segmented abdomen with three pairs of legs, and characteristic internal structures; all tissues, developed pectoral muscles and others. In addition, the abdomen of the springtail consists of only 6 segments, and not 10-11, as in polychaete flies. In the oral cavity, it resembles a mosquito, but the lower and upper jaws are recessed into the head [4].

In the soil layers of alfalfa, wheat and cotton agrocenoses of the Arka (Shymbai, Karaozek, Takhtakopyr) districts of Karakalpakstan, 23 species of Collembola belonging to 2 groups, 4 relatives and 21 congeners, were identified. The diversity of representatives of the Poduromorpha and Entomobryomorpha groups in the studied areas is explained by their distribution in the upper soil layers. Various types of agrocenoses of Karakalpakstan are characterized by the species composition and characteristics of springtail populations in soils. In the soil layers of the agrocenosis of alfalfa, 14 species of springtails were found, in wheat plants - 15 species, in cotton plants - 13 species. This indicates the similarity of ecological conditions in agrocenoses.

The species composition and composition of springtails in the agrocenoses of the rear areas of Karakalpakstan increase to the maximum in a 10-20 cm soil layer. In alfalfa, wheat, cotton agrocenoses and soil layers of natural ecosystems, the absence of seasonal dynamics of springtail in the spring-autumn period was noted. In alfalfa plants - Isotoma notabilis, (Isotomiella (Isotoma) minor, *Folsomina onychiurina* species, wheat agrocenoses in soil layers - Freesia (Triaeana) mirabilis, *Henyllodes armatus*, Isotomyella (Isotoma) minor, *Folsomina candida*, *Folsomina onachiurina*, species, cotton agrocene ozes in soil layers - *Willmia anophthalma*, *Henylla maritima*, Oligaphorura (Lipura) Greenlandic species dominate.

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