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REGULARITIES OF DISTRIBUTION OF ROCKY RIDGE GRASSLAND VEGETATION

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As a result of the previously performed syntaxonomy of the grassy vegetation of the Rocky Range, within the Karachay-Cherkess Republic, 6 communities have been identified, which at this level of syntaxonomic analysis are classified into three classes of ecology-floristic classification.

*The **Anemonastrum narcissiflorum - Linum hypericifolium** community represents moist mid - range meadows with sub-alpine elements is considered in the class of **Molinio - Arrhenatheretea**. The community of **Stachys macrantha - Pedicularis wilhelmsiana**, representing steppe mid-range meadows of fringes, is considered in the class of **Trifolio - Geranietea sanguinei**. The transitional community **Erysimum cuspidatum - Pedicularis sibthorpii**, which represents the sub - Mediterranean semi-oxyphytic petrophyte grass communities, is already seen in the **Festuco - Brometea** class. The remaining three communities of **Argyrobium biebersteinii - Anthyllis vulneraria**, **Convolvulus arvensis - Daucus carota** and **Helianthemum nummularium - Scutellaria orientalis** are considered as meadow steppes and also classified as **Festuco - Brometea**, but their syntaxonomy requires additional studies.*

The results of indirect ordination supplement and confirm syntaxonomic constructions, reveal patterns of distribution of communities of grassy vegetation of the Rocky Range in the space of environmental factors. Only the first axis of variation has ecologically reliable information that can be interpreted as the axis of moisture: the wetter meadow mountain communities with subalpine elements located at one end of the axis are represented in the end by steppes with the participation of upland xerophytes. All descriptions are divided into two parts, corresponding to different types of vegetation - meadows and steppes.

Keywords: *Caucasus, Rocky Ridge, grassland vegetation, syntaxonomy, communities, ecology, ordination.*

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THE TYPES OF DESERTIFICATION OF SOILS AND CRITERIA FOR THE EVALUATION OF DEGRADATION PROCESSES

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Identify forms of soil desertification in natural areas combined into classes that represent the major taxonomic units lithogenic and halogen origin. Criteria for assessing land degradation in arid determined by anthropogenic impact and process of accumulation of soluble salts performance, which depends on the particle size distribution of soil. Differentiation of human-induced changes, contributing to accelerated degradation in the absence of significant changes in the natural environment components. Degradation processes with relatively high contrast transition stages xerophytization widespread in coastal and delta-alluvial plains. Go terrestrial ecosystems meadow, meadow-steppe, steppe types, including representatives of forest and bush to the stage arid under the influence of human activities makes for a length of time, when the climatic conditions remain virtually unchanged. The leading role of the human factor in the draining soils and their reactions cause the appearance of new symptoms evaluation of degradation processes. Obtained lithogenic classes, halogen (thistle) desertification, combining appropriate soil types. For comparative evaluation introduced the background level of the class, where there are no signs of natural degradation. In the selected classes the desertification stages are differentiated by particle size distribution, temperature regime and root zone salinity.

Keywords: desertification of soils, anthropogenic impacts, evaluation, classes, particle size distribution, the level of background, processes, salt accumulation.

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BIODIAGNOSTICS OF STABILITY OF KUBAN'S RICE SOILS TO CHEMICAL POLLUTION

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As a result of the conducted model researches it has been established that the rice soils of Kuban created on chernozems ordinary are less steady against pollution by heavy metals (chrome, nickel, copper, lead) and oil, than the similar chernozems which aren't used for rice growing and also calcareous soil and brown soils, but are steadier, than brown forest soils and saline soils of the South of Russia. Pollution of rice soils of Kuban oil and heavy metals leads to decrease in biological indicators: total number of bacteria, activity of a catalase and degidrogenase, cellulolytic activity, abundance of Azotobacter, length of roots of a garden radish, IPBS. On ecotoxicity degree for rice soils of Kuban heavy metals form the following row: Cr > Cu > Pb ≥ Ni. The regional standards of maximum permissible content of chrome, copper, lead, nickel and oil in the rice soils of Kuban created on chernozems ordinary determined by violation of ecological functions of soils are offered.

Keywords: rice soils, stability, pollution, heavy metals, oil, biodiagnostics, regional standards.

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CHANGES IN THE CONTENT OF RNA AND STRUCTURAL STATE OF THE DNA UNDER SALINITY IN VARIETY ACCESSIONS OF *G. BARBADENSE* L., WITH THE DIFFERENT LEVEL OF RESISTANCE TO STRESS

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In the first series of investigations germination of seeds of different cotton variety accessions in salinization conditions was studied. Ability of different varieties to adapt to the harmful environment conditions is determined by its genotype. Depending on genotype, negative impacts of salinity stress on plant are different: more tolerant are characterized by low level of sensitivity to stress. The reaction of various accessions to stress enabled us to divide roughly the cotton accessions into groups with different degrees of resistance. Selected resistant cotton varieties have a perspective for being used in a breeding practice for obtaining new economically valuable forms. These varieties are characterized by lack of stress depression of physiological indicators.

Activation of the synthesis of RNA, total DNA, as well as labile and residual fraction of DNA, while reducing of the stable DNA fraction synthesis in resistant cotton genotypes were observed under abiotic stress factors of environment. Contrary, there was not any changes on the synthesis of the RNA, total DNA, labile and residual fractions of DNA in susceptible genotypes, whereas increasing of the stable fraction of DNA was observed.

Keywords: stress, salinity, RNA, DNA fractions, *G. barbadense* L.

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INFLUENCE OF NO-TILL ON ECOLOGICAL AND BIOLOGICAL PROPERTIES OF CHERNOZEMS

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A comparative study of the effect of the 7-year use of No-Till technology on the ecological and biological properties of the chernozems in the Rostov Region has been carried out. The objects of the study were 28 fields occupied by various crops: winter wheat, barley, sunflower, chickpeas, oil flax, coriander and others. Studies were carried out three times during the growing season in fields with different treatment systems. In comparison with traditional methods of soil treatment, which provide for plowing, No-Till leads to a change in the physical and biological properties of chernozems. In the surface layer of the soil moisture rises, density and hardness (penetration resistance) increase. The main changes in physical properties concern the surface layers of the soil and are especially significant in the dry season. The penetration resistance values are significantly increased when the soil dries out, regardless of the way the soil is treated. In fields with No-Till, the number of microorganisms and the biological activity of soils are increasing. The investigated indicators showed different informative value when comparing traditional and alternative technologies of soil cultivation. The intensity of soil carbon dioxide and the cellulolytic activity of soils differed slightly in fields with different treatments. However, in general, it can be concluded that the soil-saving technologies of No-Till can serve as one of the radical means of preserving and enhancing the potential fertility of soils.

Keywords: *biodiagnostics, direct seeding, No-Till, anthropogenic impact.*

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