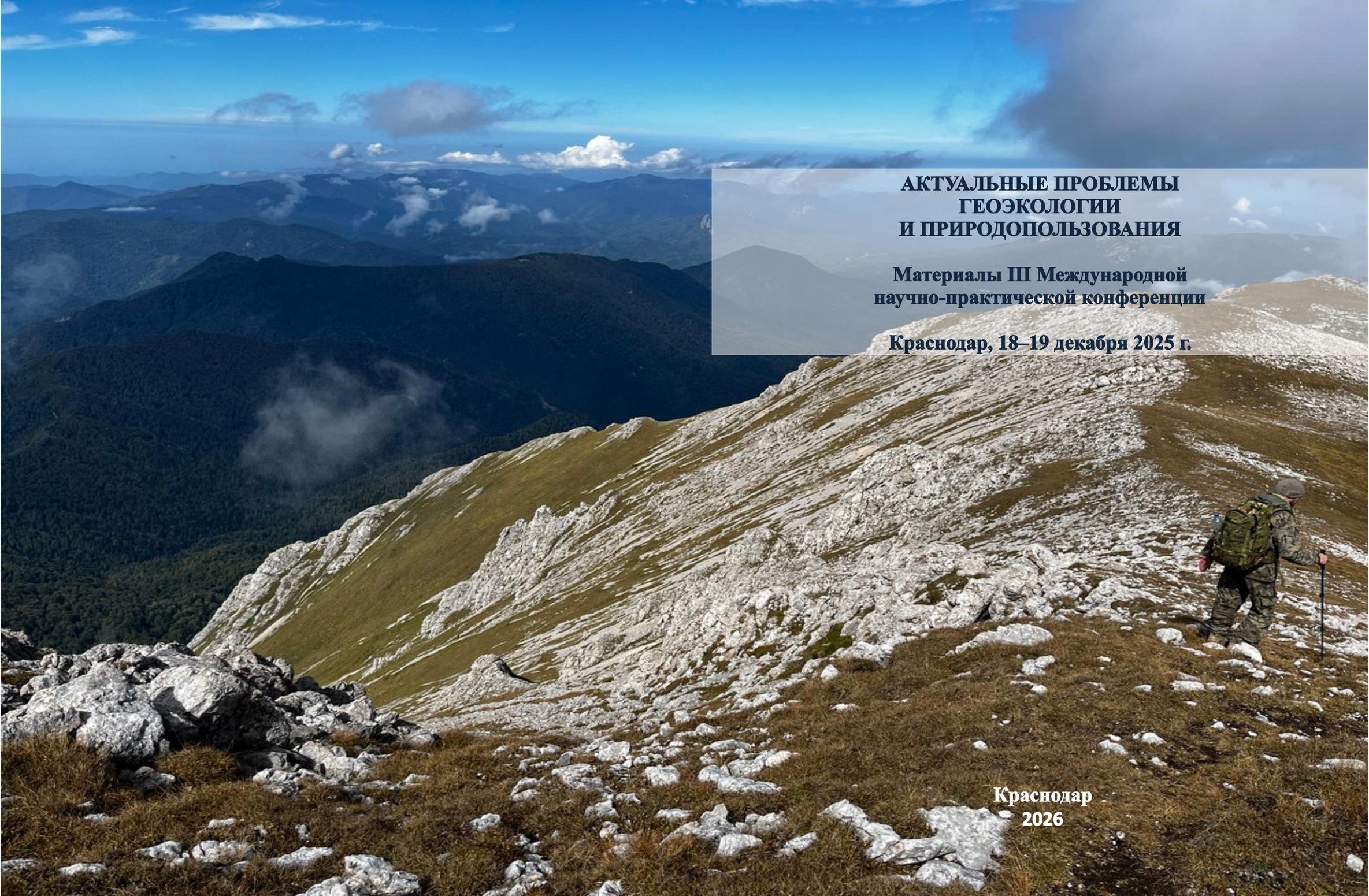

АКТУАЛЬНЫЕ ПРОБЛЕМЫ ГЕОЭКОЛОГИИ И ПРИРОДОПОЛЬЗОВАНИЯ

Материалы III Международной научно-практической конференции

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ОПЛОДОТВОРЕНИЕ СЕМЯН НЕКОТОРЫХ РАСТЕНИЙ, ОТНОСЯЩИХСЯ К СЕМЕЙСТВУ AMARANTHACEAE JUSS, В УСЛОВИЯХ ВЫСОКОГОРИЙ КАШКАДАРЬИНСКОЙ ОБЛАСТИ
FERTILIZATION OF SEEDS OF SOME PLANTS BELONGING TO THE AMARANTHACEAE JUSS FAMILY IN THE CONDITIONS OF THE HILLS OF KASHKADARYA REGION

Аннотация. В данной статье представлены результаты исследований качества посадки, лабораторной и полевой всхожести семян пустынных кормовых растений.

Ключевые слова: пастбища, продуктивность, деградация, кормовые растения, фиторемедиация, сорта, семена, всхожесть.

Abstract. This article presents the results of studies on planting quality, laboratory and field germination of seeds of desert forage plants.

Key words: pastures, productivity, degradation, forage plants, phytoremediation, cultivars, seeds, germination.

Kashkadarya of the region Qamashi and Guzor districts pastures mountain took half desert , that is hill pastures to himself special plant cover have and pastures productivity different in years to be precipitation quantity and spring of the season warm or cool to come looking sharp changed stands Especially the next one in years often repeated coming arid years as a result pasture in animal husbandry food shortage strengthened , field efficiency own negative effect is holding Meadows plant cover basis grass harvest doer ephemera and ephemeroids organize so they relatively short in term own vegetation finish and write to the season come pasture food shortage surface will come Therefore, it is an urgent task to establish multi-component high-yield pasture agrophytocenoses in the region, in which it is appropriate to widely use high-yield desert nutritious plant varieties created in our country.

The purpose of the research is to study the quality indicators of seeds of desert edible plant species, their laboratory and field performance under local conditions. The results of this research will be of practical importance

in determining the criteria of seed consumption in the establishment of pasture agrophytocenoses.

The sources of the study are hill pastures of Qamashi and Guzor districts, desert nutritious plant species: black saxophone − *Haloxylon aphyllum* – «Nortuya», izen − *Kochia prostrata* – «Otavniy», chogon − *Halothamnus subaphyllus* – «Jaykhun» and teresken − *Ceratoides ewersmanniana* – «Tulkin» varieties were served.

Research methods. In carrying out research, we used generally accepted methods in seed science (Leurda, Belskikh, 1974), «Methodological recommendations for the introduction and selection of desert nutritious plants» [Rabbimov A., Khamraeva G.U., 2016] and B.A. Dospehov in the biostatistical analysis of the obtained data [Dospehov B.A., 1979], «Metodika polevogo opyta» techniques were used.

Analysis of research results. Purity of seeds. Nutritious species adapted to grow in the unfavorable climatic conditions of the desert region have unique characteristics of seed formation, and stress factors such as atmospheric and soil dryness, high solar insolation, low relative humidity have a negative effect on the flowering and seed formation processes of plants, and this situation results in relatively low seed quality. causes it to happen. In seed science, the most important features indicating the quality of seeds are purity of seeds, absolute mass of 1 000 grains of seeds, and their fertility indicators in laboratory conditions.

Table 1

Purity of plant species, %

Species and varieties	Purity of seeds, %				
	2020	2021	2022	2023	Average in 4 years
Haloxylon aphyllum – «Nortuya»	46,0	54,0	52,0	43,0	48,7±2,5
Halothamnus subaphyllus – «Jaykhun»	52,0	52,0	42,0	26,6	43,1±5,9
Kochia prostrata – «Otavniy»	40,0	32,0	32,0	29,4	33,3±2,3
Ceratoides ewersmanniana – «Tulkin»	36,0	26,0	34,0	22,5	29,6±3,2

The level of economic suitability of seeds is determined, and then the amount of seeds used per hectare is determined. In conventional (hand-powered) seed harvesting technology, seed purity was found to vary between species from 22,5 % to 54,0 % (tabl. 1). It was observed that the purity of the seeds produced in the extremely dry year 2023 was

significantly lower than the purity of the seeds produced in other years. In this case, an increase in the weight of the fraction of flower buds in the dry state, which did not develop to the formation of seeds, was observed in the seed samples. On average, in 4 years, the purity of the seeds of the «Nortuya» variety of the black saxophone was 48,7 %, in the «Jayhun» variety − 43,1 %, in the «Otavnyy» variety of the izen – 33,3 %, and in the «Tolkin» variety – 29,6 %. % was determined. Analyzing the data in the table, it can be said that the purity of the seeds can vary depending on the climate characteristics that occur in different years.

1 000 dona seeds massi. The 1 000-donasi mass of the tribes is one of the defining indicators of the tribe's characteristics. The availability of information in the scientific literature [Balyan G.A., 1972], the large tribes are divided into forests, the vitality of the species obtained from them and the usefulness of plants are shown (tabl. 2).

Table 2

Desert edible plant varieties tribes 1 000-grain weight, g
Kamashi Experimental Field, 2020−2023, 2-spear

Tours	2020	2021	2022	2023	4 years old
Haloxylon aphyllum – «Nortuya»	3,45	3,5	3,6	3,7	3,56
Halothamnus subaphyllus – «Jaykhun»	16,9	16,8	14,7	14,3	15,6
Kochia prostrata – «Otavniy»	2,05	2,4	2,2	1,83	2,12
Ceratoides ewersmanniana – «Tulkin»	6,34	7,0	7,5	6,8	6,91

According to the information of V. Yu. Shegay (1978), who conducted special research in this direction, the diameter of the ice is 1,5−2.5 mm; Fertilization of the 2,5−3,0 mm and 3−4 mm seed fractions was a convincing difference in turfgrass development and plant productivity, with laboratory and field fertility of large seeds up to 2,5 times that of small seeds, and plant productivity of 1,3−1 It was found to be up to 6 times higher. As can be seen from the data in the table, the mass of 1 000 grains of seeds is specific for each type of plant, and this indicator may vary to some extent depending on the climatic characteristics that occur in different years. This can be clearly observed in the seeds of Izen and Teresken varieties, the mass of 1 000 grains of seeds produced in the dry year 2023 is significantly lower than in previous years.

Field germination of seeds is directly related to external environmental conditions and varies depending on climatic features that occur in different

years. There are data that field germination of seeds of desert nutritious plant species can vary from 0,5 % to 25,0 % in different years [Shamsutdinov Z.Sh., 1975]. In the study of the field fertility of seeds, we conducted special field experiments in the experimental fields of Guzor and Qamashi districts at the optimal time of sowing seeds. In the experiments, we sowed 100 seeds from the seeds of each species in 3 repetitions and determined the number of grasses that sprouted in the spring [Abaturov B.D., 2006]. The data obtained from the experiments are presented in table 3. As can be seen from the data in the table, the field fertility of seeds was different in the years of the study, depending on the climatic conditions that occurred in different years, it varied from 10,6 % to 30,6 % in Qamashi district, and from 7,6 % to 25,3 % in Guzor district. In all types and varieties, the lowest fertility was observed in 2023, the highest fertility (16,0 %) was observed in the teresken «Tolkin» variety in Qamashi district, and this variety was also observed in Guzor district (10,6 %).

Table 3

Fertility of seeds of species and varieties of desert food plants under field conditions,%

Kamashi and Guzor experimental fields, 2021−2023

Tours	Kamashi			Guzar		
	2021	2022	2023	2021	2022	2023
«Otavniy»	26,3±3,2	22,6±2,7	14,3±2,7	17,3±2,3	18,0±1,1	9,0±1,5
«Jaykhun»	19,3±2,0	26,0±3,5	10,6±1,2	17,0±0,6	18,0±2,3	8,6±2,1
«Tulkin»	30,6±3,4	29,3±3,6	16,0±1,1	21,0±1,7	25,3±2,3	10,6±0,9
«Nortuya»	25,0±2,1	26,6±2,9	12,3±3,0	19,6±1,7	20,0±2,3	7,6±1,2

Relatively high results of field fertility of seeds in Qamashi district can be explained by the relatively higher amount of precipitation in this area compared to Guzor district.

The desert is nutritious varieties of plant species purity of seeds is relatively low (29,6−48,7 %), which can be explained by the formation of seeds in the extreme conditions of the desert. The seeds of these plant species are small seeds can be introduced (mass of 1 000 seeds is 2,12−15,6 g). The field fertility of the seeds is also relatively low and can vary from 7,6 % to 30,6 % in different varieties, depending on the climate characteristics that occur in different years.

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ЗАПОВЕДНОЕ ДЕЛО