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Productivity Indicators of Seeds of Circassian Species under the Conditions of Introduction

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Abstract:

The article describes the results of the study of Paletsky and Richter's cherchez seeds in the process of their introduction.

Keywords: Seed, fruit, seed coat, productivity, flowers, anthers, flower buds, generative branches, pollination.

Enter. Currently, the crisis occurring in 45% of the pasture areas of our republic requires the efficient use of pastures, the preservation and enrichment of biodiversity, and the immediate phytomelorization of the pastures in crisis.

In our republic, desert and hill pastures are pastures used for cattle breeding, camel breeding, and goat breeding almost all year round and provide about 95 percent of livestock feed requirements.

Decree PD-3686 of the President of the Republic of Uzbekistan dated April 27, 2018 "On measures to radically improve the seed production system in the Republic of Uzbekistan" is aimed at improving the condition of natural pastures and increasing productivity by organizing the primary seed production of pasture nutritious plants as well as the seed production of cultural plants. research is important in solving this urgent problem.

In the Republic of Uzbekistan in 2022-2026, 2 tasks have been defined, including "... to increase the income of farmers and farmers by at least 2 times through the intensive development of agriculture on a scientific basis, to bring the annual growth of agriculture to at least 5%".

High-quality seeds of promising pasture forage plants are required to increase heat, drought, and soil salinity-tolerant desert pasture forage species, restore biodiversity, and improve the condition of natural pastures.

Seeds collected from natural pastures are usually of poor quality, and due to the scattered and sparse distribution of plant species, there are some difficulties in seed preparation. Therefore, to improve the condition of natural pastures, the first task is to expand the seeding areas of promising desert pasture nutritious plants.

The purpose of the research is to substantiate the characteristics of the quality indicators of seeds of Circassian species (Paletsky and Richter) in the conditions of the Nurota hills.

Research methods. Guidelines for seed production of introduced species, [2] "Methodological recommendations for the introduction and selection of desert food plants" were used [3].

Research results. Unfavorable climatic conditions are hurting the growth and development of desert nutritious plant species and varieties, seed production, and their quality indicators. There are cases of low-quality seeds produced as a result of anomalous cold temperatures in winter and extremely dry spring (April-May) months.

Seed production is one of the most variable traits of desert forage plant species. Because the variability of the productivity of these seeds has a direct impact on the annual rainfall and environmental climate conditions. For example, the coefficient of variation of population variation in individual seed productivity in different Izen populations was found to vary from 44.5% to 112.3% in different populations [4].

Determination of the fertility of seeds in laboratory conditions is one of the main indicators in the assessment of seed quality. When the fertility of Choghon seeds was washed and then dried in laboratory conditions, a sharp increase in fertility was found compared to the control (Rabbimov., Hamroeva, 2022).

In our experiments, the results of the study of individual seed productivity of cherkaz species showed that the seed productivity varied from 11.8 g/bush to 68.5 g/bush in Richter cherkaz under the conditions of Nurota hills. And in Paletsky cherkez, this indicator varied from 13.2 g/bush to 64.4 g/bush. (Table 1).

Table 1. Individual seed productivity of Circassian species. Nurota experimental field, 2023.

Circassian species	A seed formed on a bush yield , g		
	Variability range	M±m	CV,%
Salsola Richteri	1 1.8 -6 8.5	28 , 6 ± 3, 3	4 5 , 8
Salsola Paletzkiana	1 3.2 -6 4.4	3 0 , 2 ± 3, 0	4 7 , 3

As can be seen from the table data, the difference between the seed yields of both species is almost the same under the conditions of Nurota hills. It was concluded that these indicators, without being maximum indicators, can change depending on the characteristics of climatic conditions occurring in different years and the age of plants.

The presence of great variability in populations on seed yield indicates the existence of great opportunities for selection work (Table 1).

The seed productivity of plants growing in various extreme (extreme drought, soil salinity) conditions of the desert is one of the lowest indicators. For example, it was determined that only 25% of the flowers produced in the zen plant produce quality (normally formed) seeds [4,5].

In our experiments, it was found that all the flowers produced in both species did not produce normally developed seeds. Well-developed generative branches were identified from well-

developed model bushes of both Circassian species, and the number of flower buds formed in them was determined. The number of produced flower buds was determined to be from 30.8 to 33.5 pieces on average in both species (Table 2).

Table 2. Seed productivity of Circassian species, Nurota, 2023

Circassian species	The number of flowers formed, PUM	The number of normally developed seeds, XUM	Productivity coefficient, UMK, %
Salsola Richteri	30.8 ±1.3	10.3±1.13	33.4
Salsola Paletzkiana	33.5±1.4	11.8±1.5	35.2

To study the quality of the produced seeds, 100 seeds were frozen in 3 cups (3 repetitions) in warm water for 1 day, and after the seeds were fully germinated, we determined the seed pods by manually separating each frozen seed from its shell on white paper (Table 3).

As can be seen from the table, it was found that 59% of Richter's seeds had normally developed seed pods. In Paletsky Circassian seeds, this indicator was found to be significantly lower, i.e. 55.6%.

Table 3. The completeness of seeds of Cherkasy species, % (normally developed seed pods)

Circassian types i	Number of seeds	Normal developed fertile number of seeds , pcs			M±m
		Returns			
		I	II	III	
Salsola Richteri	100	53	60	64	59,0 ± 3,3
Salsola Paletzkiana	100	50	57	60	55,6 ± 2,0

Despite the fact that the seeds of desert food plants are large, full, and the wings are well developed, in 50% of the seeds, the seed coat may not be developed. Similar data were recorded in our experiments [1].

In conclusion, it should be noted that self-pollination of desert nutritious plants serves as a scientific basis for expanding their cultural areas. But in plants, the germination of seeds in field conditions is very low. Despite this, it retains its viability after germination and grows and develops rapidly.

Planting and breeding of Circassian species in desert regions of our Republic, in addition to sandy and gypsum soils, can also give good results.

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