JournalNX

Special Issue on Application of Science and Technological Advancements for Sustainable Development
Published by Novateur Publication India's
JournalNX- A Multidisciplinary Peer Reviewed Journal

journalnx.com | ISSN: 2581-4230 | 29th Dec. 2020

PRODUCTIVITY INDICATIONS OF BOYALICH (SALSOLA ARBUSCULA) SEEDS IN KARNABCHOL CONDITIONS

Bobaeva Adiba Saydalievna
Scientific-Research Institute of Karakul Sheep Breeding and Desert Ecology

Rabbimov Abdullo
Scientific-Research Institute of Karakul Sheep Breeding and Desert Ecology

Rafiev Bakhtiyor Khamrokulovich
Scientific-Research Institute of Karakul Sheep Breeding and Desert Ecology

Abstract
The article describes the results of research on the productivity of Boyalich (Salsola arbuscula) seeds in Karnabchol.

Keyword: Fruit, fruit peel, productivity, seeds, flowers, wings, flower buds, generative branches, pollination.

Relevance of the topic. Resolution of the President of the Republic of Uzbekistan dated April 27, 2018 No PR-3686 "On measures to radically improve the seed system in the Republic of Uzbekistan" is aimed at improving the condition and increasing the productivity of natural pastures by organizing primary seeding of forage crops, like seeding of cultivated plants. The research that is planned to be done will play an important role in addressing these pressing issues.
Quality seeds of promising pasture forage plants will be needed to improve the condition of natural pastures. Seeds prepared from natural pastures are often of poor quality, and there are some difficulties in seed preparation due to the scattered and sparse distribution of plant species. Therefore, in order to improve the condition of natural pastures, the establishment of seed fields of promising pasture forage crops is a priority.

Research sources and methods. In the saline sandy pastures of the Republic of Karakalpakstan, Muynak district, the seeds of the population of Salsola arbussula Pall, which are naturally distributed, served. Methodological recommendations on "Introduction and selection of desert forage plants" were used in field experiments [3].

JournalNX
Special Issue on Application of Science and Technological Advancements for Sustainable Development
Published by Novateur Publication India's
JournalNX- A Multidisciplinary Peer Reviewed Journal
journalnx.com | ISSN: 2581-4230 | 29th Dec. 2020

Research results and their analysis. Seed productivity is one of the most variable characteristics among desert forage plant species. Because this feature is directly affected by the climatic conditions of the year. For example, the coefficient of variation of population variability in individual seed yields in different izen populations ranged from 44.5% to 112.3% in different populations [4]. The results of the study of individual seed yields of '*boyalich'* and '*kuyrovuk'* plants showed that seed yield in the *boyalich* population varied from 11 g/bush to 64 g/bush in different individuals. In the *kuyrovuk* population, this variability was also found to vary from 10.0 g/tube to 62 g/tube (Table 1).

Table 1 Individual seed yield of "boyalich" and "tail" plants. Qarnab Experimental Field, 2017

Plant type	**A seed crop formed in a bush, g**		
	Variability range	**M±m**	**Reliability coefficient,%**
Salsola arbuscula Pall.	11-64	30,3±3,4	47,4
Salsola orientalis S.G.Gmel	10-62	30,8±3,1	49,7

As can be seen from the table, the seed yields of "boyalich" and "kuyruvuk" plants in Karnabchol conditions are almost the same. Seed yield indicators were studied in 2-year-old plants. These indicators may vary depending on the characteristics of the climatic conditions that occur in different years and the age of the plants, without maximum indicators [4]. The presence of large variability in populations, in terms of seed yield, indicates that there is great potential for selection work.

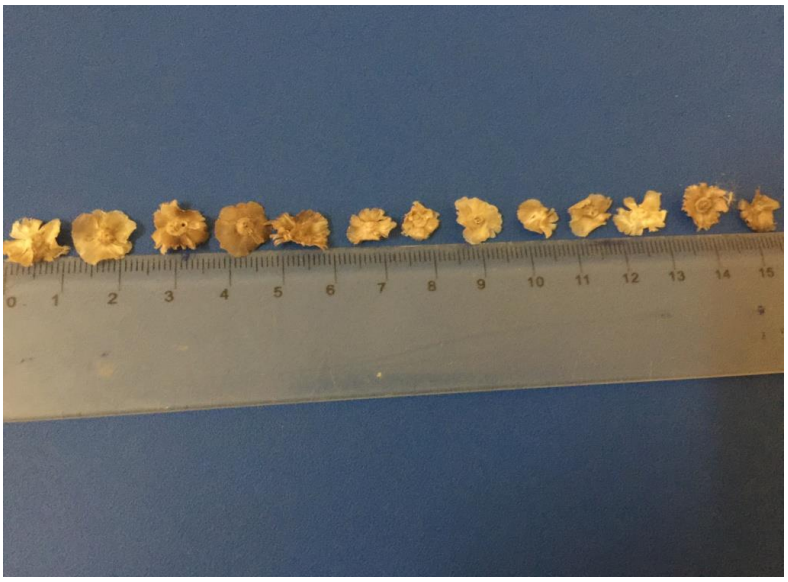

Figure 1. Salsola arbuscula fruits

JournalNX
Special Issue on Application of Science and Technological Advancements for Sustainable Development
Published by Novateur Publication India's
JournalNX- A Multidisciplinary Peer Reviewed Journal
journalnx.com | ISSN: 2581-4230 | 29th Dec. 2020

Seed productivity of plants growing in extreme desert conditions is very low. For example, only 25 percent of the flowers produced in the izen plant produce quality seeds [5].

In our experiments, it was found that not all of the flowers that were formed in the *boyalich* plant produced normally developed seeds (Figure 1). Well-developed generative branches were identified from the well-developed model tubers of Boyalich and the number of flower buds formed in them was determined (Table 2).

The number of flower buds formed was found to be 26 to 43 on each branch.

Table 2 Seed productivity of salsola arbuscula, Karnabchul, 2016-2018

Years	**Number of flowers produced, potential seed yield per unit**	**Normally developed seed count, actual seed yield per unit**	**Productivity coefficient, seed productivity coefficient, %**
2016	26±1,52	8±1,15	30,7
2017	31±1,52	11±1,52	35,5
2018	43±1,15	14±2,08	32,6
M±m	33,5±5,05	11,0±2,12	32,9

At the end of October, a study of the quality of seeds produced after seed ripening revealed that an average yield of 32.9% of normally developed seeds was formed. In order to study the quality of the seeds produced, 100 seeds were soaked in water for 1 day and after complete germination, the seeds were identified by manual separation of the seed pods from the seed husks (Table 3). As can be seen from the data in the table, 69% of the seeds produced in 2017 were found to have normally developed seed pods. In the seeds harvested in 2018, the figure was 46.3%. This means that the quality of seeds varies depending on the climatic conditions of the year, especially as this figure is inextricably linked to the annual rainfall, with a rainfall of 207.6 mm in 2017, 69 percent of mature seeds were harvested, and in drought year with 66.5 mm rainfall, in 2018, this figure was found to be significantly lower – 46.3%.

Table 3 Fertility of "Boyalich" seeds, in % (weight of normally developed seed pods)

Years	**Number of seeds**	**Number of normally developed germinated seeds, pcs**			**M±m**
		I	**II**	**III**	
2017 Qarnab	100	65	69	73	69,0±2,3
2018 Muynak	100	46	51	42	46,3±2,6

In well-developed seeds with 50% wingspan, the seed pods may not be developed. Similar data have been reported in our experiments [1].

Conclusion

To conclude, the self-pollination feature of the *boyalchi* serves as a scientific basis for the expansion of its cultural fields. But plant seed germination is very low. Nevertheless, it grows and develops rapidly, maintaining its viability after germination from the ground. Therefore, planting and propagating this species in sandy and gypsum soils of the desert region can give good results.

References

1. V. I. Konycheva. On the biology of flowering and fruiting of Salsola arbuscula Pall // Uzbek Biological Journal, 1963. №2.-p.22-25.
2. Methodical instructions on seed science of introduced species. M .: Nauka, 1988-60s.
3. Rabbimov A., Hamroeva G. Methodical recommendations on the introduction and selection of desert forage plants. Samarkand, 2016.-42 p.
4. Rabbimov A. Genetic resources of desert forage plants Status and prospects of their use // Genetic resources of agricultural crops: status and prospects of use. -Tashkent, 2014. -p. 69-72.
5. Rabbimov. Introduction and selection bases for increasing desert pasture productivity. Scientific and practical achievements in the field of botany and current problems. Proceedings of the scientific-practical conference, Samarkand, 2014. 72-75.