



## The Effect Of Sowing Rate And Period On The Fertility Of Ryjik Seeds

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ABSTRACT

In the article, the effect of planting period and standards on the germination of autumn camelina varieties grown in light gray soils of Kashkadarya region and the number of plants germinated per 1 m<sup>2</sup> area was studied and analyzed.

**Keywords:**

Camelina, seeds, seeding rate, sowing time, moisture, temperature, fertility, number of bushes, root, plant.

**Relevance of the topic.** The reduction of cotton cultivation areas in our republic had a significant impact on the reduction of vegetable oil production. There is a trend of annual reduction of vegetable oil production per capita. Therefore, in order to satisfy the population's demand for oil-oil products, it is important to increase the amount of cultivation of oil-bearing crops and to develop cultivation technology and introduce them into production.

**The level of study of the topic.** S.L.Gorlov, V.S.Trubina, O.A.Serdyuk, T.Y.Prakhova, Y.B.Abdulina, O.N.Zelenina, D.K.Ryakhova and other scientists have conducted extensive scientific researches and achieved effective scientific results.

Ryzhik is a very cold-resistant plant. Its seeds begin to germinate at a temperature of 1-20 °C. However, good germination and its growth are stronger at temperatures of 10-120 °C [1;158-b].

E.L. According to Turina's research, he15 cm row spacing and planting rate of 8.0 million per hectare. Sowing in the amount of seeds gave high results[2; p. 55].

According to the research results of S.L.Gorlov, V.S.Trubina and O.A.Serdyuk, the

winter variety of ryzhik is characterized by frost resistance (seeds grow at +1 °C, seedlings withstand frosts of -10 °C), winter resistance in terms it is not inferior to winter rye. It is characterized by optimal leaf development in autumn and drought tolerance. Ryjik's short growing season is 225-230 days. It makes good use of the spring moisture reserve to produce a crop, and after harvesting it, it allows the soil to be prepared for autumn grain crops in good quality.[3; p. 125-126].

Scientific research works on agrotechnologies of rice cultivation have not been carried out on the scale of our republic.

**The purpose of the study.** It consists in the development and introduction of agrotechnology for the cultivation of non-traditional ryzhik crops in the conditions of irrigated light gray soils of the southern regions of the republic.

**Materials and methods used.** Scientific research was carried out at the experimental site of the Southern Agricultural Research Institute in Boston, Guzor district. In field experiments, "Penzyak" and "Karat" varieties of autumn rye in early (10.10), middle (20.10)

and late (01.11) periods, seeds 8.0; 10.0; The influence of seeds on field fertility was determined when planting at the rate of 12.0 and 14.0 million units/ha.

The amount of total NPK and mobile NPK in soil, plant and grain, protein, type, mass of 1000 grains were determined in the laboratories of the Southern Agricultural Research Institute.

Soil samples for analysis were taken according to the methods of "Methods of agrochemical, agrophysical and microbiological research in irrigated cotton areas" (1963).

Amount of humus according to the method of I.V.Tyurin (GOST-26213); nitrate nitrogen-ion selective method, GOST-13496-10; total nitrogen, phosphorus and potassium in one sample I.M.Maltseva, L.P.Gritsenko's method; mobile phosphorus in 1% ammonium carbonate solution by the method of B.P. Machigin; by the method of P.V. Protasov in an alternating potassium flame photocalorimeter; water-soluble salts and dry residue were determined by the generally accepted method, GOST-26423-85, using a potentiometer in pH aqueous absorption.

In field conditions, the density of the soil is measured using a 500 cm<sup>3</sup> cylinder according to the Kachinsky method; specific mass by pycnometric method; soil porosity in the

calculation method; water permeability of the soil was performed by the Kaczynski method.

Field and laboratory experiments were carried out on the basis of the methodological manual of the All-Russian Research Institute of Plant Science (1985). Phenological observations and biometric analyzes were carried out according to the methodological manual of the State Commission for Testing Agricultural Crops (1989). The study of plant growth and development was carried out by measuring the field fertility of seeds and the thickness of plants: during germination and before harvesting, in 0.5 m<sup>2</sup> areas, where constant observation is carried out, in 3 places located diagonally across the plot.

**Research results.** In field experiments, when autumn rye varieties were planted in the early (10.10) period, an average of 564-1017 plants/m<sup>2</sup> sprouted, and the duration of field germination was 6-7 days, while when planted in the middle (20.10) period, the average was 680-1142 units/m<sup>2</sup> of plants germinated, the duration of field germination was 7-9 days, and when planted in the late (01.11) period, with an average of 587-1038 units/m<sup>2</sup> of plants germinated, the duration of field germination was 8-14 days did (Table 1).

**Table 1**  
**Effect of sowing Ryjik seeds at different rates and periods on field fertility**

T/r	Planting period	Planting rate	Varieties name	2020		2021		2022		Average	
				number of sprouted plants, units/m <sup>2</sup>	duration of germination, days	number of sprouted plants, units/m <sup>2</sup>	duration of germination, days	number of sprouted plants, units/m <sup>2</sup>	duration of germination, days	number of sprouted plants, units/m <sup>2</sup>	duration of germination, days
1	10. Oct	8 mln. piece	Penziak	566	6	641	7	573	6	593	6
2			Carat	575	6	647	7	564	6	595	6
3		10 mln. piece	Penziak	746	6	764	7	737	6	749	6
4			Carat	733	6	771	7	728	6	744	6
5		12 mln. piece	Penziak	838	6	998	7	867	6	901	6
6			Carat	866	6	989	7	874	6	910	6
7		14 mln. piece	Penziak	980	6	1011	7	976	6	989	6
8			Carat	969	6	1017	7	964	6	984	6

9	October 20	8 mln.	Penziak	690	9	699	8	693	7	694	8
10		piece	Carat	680	9	702	8	689	7	690	8
11		10 mln.	Penziak	847	9	853	8	858	7	853	8
12		piece	Carat	846	9	863	8	854	7	854	8
13		12 mln.	Penziak	1027	9	1032	8	1036	7	1032	8
14		piece	Carat	1034	9	1044	8	1028	7	1036	8
15		14 mln.	Penziak	1122	9	1134	8	1126	7	1127	8
16		piece	Carat	1114	9	1142	8	1136	7	1131	8
17	November 01	8 mln.	Penziak	637	14	592	10	666	8	632	11
18		piece	Carat	631	14	587	10	659	8	626	11
19		10 mln.	Penziak	780	14	760	10	816	8	785	11
20		piece	Carat	768	14	755	10	816	8	780	11
21		12 mln.	Penziak	919	14	862	10	989	8	924	11
22		piece	Carat	914	14	870	10	979	8	921	11
23		14 mln.	Penziak	1018	14	977	10	1112	8	1035	11
24		piece	Carat	1023	14	972	10	1117	8	1038	11

According to the data in the table, the highest indicator of field fertility of autumn rye varieties is the middle of planting term, 8.0 mln. at the rate of piece/hain the planted option, the number of sprouted plants in the "Penzyak" variety was 699 pieces/m<sup>2</sup>, while the field germination was 87%, the lowest indicator, the early period of planting, the norm of 14 million pieces/ha, the number of sprouted plants in the "Karat" variety in the planted option 964 pieces/m<sup>2</sup>, field fertility was 70% (Fig. 1).

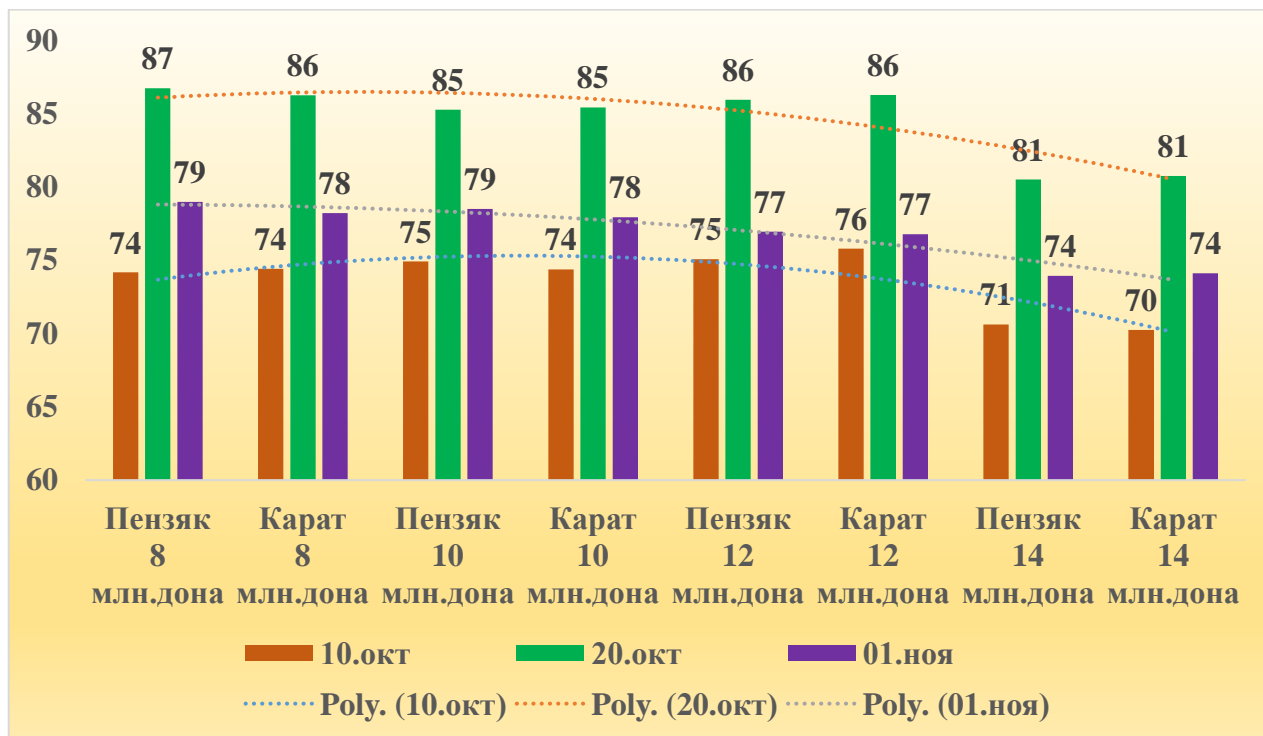


Figure 1. Influence of planting norms and periods on the field fertility of Ryzhik seeds (2020-2022)

According to the research, it was found that the field fertility of the seeds of autumn ryzhik varieties was significantly affected by the planting dates and rates, but there was no

significant difference in the field fertility of the seeds between the varieties.

In the experiment, it was found that the field germination of the seeds of autumn rye varieties is high when sown in the middle

(20.10) period, and low when sown in the early (10.10) period and late (1.11) period, which is caused by extremely hot air and soil temperatures in the first decade of October and/or November can be explained by the low air and soil temperature at the beginning of the month, and the shortening of the duration of bright days.

**Summary.** In conclusion, it was found that when 8 million seeds/ha of autumn sorghum varieties are planted in the conditions of light gray soil of Kashkadarya region in the optimal period (20.10), 680-699 plants germinated in 1m<sup>2</sup> area and the field fertility of seeds is 86-87%.

**List of used literature.**

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