



EFFECT OF SEEDLING THICKNESS ON YIELD OF WINTER WHEAT VARIETIES

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Abstract.

Winter wheat Alekseich variety on October 15, 5 mln. Sowing at the rate of one germinating seed is the most optimal seeding rate. Seeding rates are 3-4 mln. increasing from 5-6 million grains to 1000 grain vani 1-1.5 g. led to a decrease. The norm of sowing seeds in the amount of gluten is 3 mln., 4 mln., 5 mln., 6 mln. it was observed that the amount of gluten in the grain decreased with the increase of seeding rate.

Key words. Alekseich, Antonina, Grom, variety, winter wheat, seed, rate, yield, protein, gluten, growth, development, soil, nitrogen, phosphorus.

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Introduction.

Alekseich, who belongs to the Krasnodar selection of winter soft wheat, compares the varieties of Antonina with the standard variety Grom, to study the norms of sowing seeds, to carry out the phenology of the varieties' development, to evaluate the biometric indicators of the varieties, to develop agrotechnics of cultivation, and to analyze and study the yield indicators of the planted varieties in field conditions.

Siddikov R., Saidov S. According to the article, the seed sowing rate of winter wheat is determined depending on the sowing period. In conditions where winter wheat is sown in the last ten days of September, the rate of seeding is

4.5-5.0 million. It is determined on the basis of one fertile seed (or 180-200 kg/ha). 5.0-5.5 million in conditions where the seed is sown in the first half of October. It is determined on the basis of one fertile seed (or 200-220 kg/ha). When winter wheat seeds are sown in the second half of October, the sowing rate is 5.5-

6.0 million. It is defined as a unit of fertile seed (or 220-240 kg/ha) [5].

Ismailov M.M., Verdieva V.G. in the experiments carried out by Shir-Aslan 23 varieties of durum wheat in the early and middle seeding period and 4-4.5 mln. It has been proved in the experiments that the yield is high when the germinating seeds are planted [2].

Siddikov R. according to the recommendations of, the field is considered satisfactory when 4.5-5.0 million seedlings are produced per hectare or 450-500 seedlings per 1 m² [6].

Siddikov R., Mansurov A., Adashevlar I. stated that the process of growth and development of winter wheat is the norm of planting and is one of the factors affecting the winter resistance, the number of seedlings in the field and the yield depending on the period [7].

Egamov I., Adashev I., Rasulov Kh. in the conducted researches, in conditions of gray soils of meadows of Andijan region, the rate of



sowing of 11 promising autumn soft wheat varieties Asr, Durдона, Pamyat, Tanya, Moskvich, Esaul, Omad, Matonat, Muftalo, Fortuna, Kollega was 3, 4, 5, 6 million. and 15.09 in the planting period; 1.10; 15.10; 1.11 field experiments were carried out by determining the number of germinating seeds. In the first term, 64 centners of Kollegah and Asr varieties, 62 centners of Matonat variety, and 60 centners of Esaul variety were harvested in the thickness of 4 million seedlings. It was determined that the expected result can be obtained if these varieties are planted in 1-2 periods at a thickness of 4-5 million seedlings [12].

Tursunov S., Teshaboev N., Akbarova S. stated that, taking into account the early arrival of autumn in the northern regions, the dry and cold winter, and the late arrival of spring, 6.0-6.5 million seeds were sown per hectare from September 10 to October 10. In the southern regions, winter wheat from September 25 to October 5, 5 mln. if the grain is planted in the thickness of the fertile seed, the yield indicators and grain quality indicators increase [8].

Amanov A., Gurbanboev A., Siddikov R. 160-180 when planted before September 15, October 1, in the mid-term

On October 1-10, it is recommended to set the sowing rate at 190-200 kg, and on October 10-20, at the rate of 220 kg of fertile seeds. In saline areas, the above planting rates should be increased by 10-12 percent [1].

Iminov A., Kholikovlar B. After conducting research on the typical gray soils of Tashkent region, they came to the scientific conclusion that it is necessary to sow 225 kg of seeds per hectare in order to create an optimal planting thickness of winter wheat. This norm provided higher grain yield compared to other studied norms on typical gray soils [4].

Ilyasov A.A., Tillaev R. stated that the optimal conditions for the growth and development of winter wheat in the soil and climate conditions of Bukhara region are that a high grain yield can be harvested when 200 kg of seeds are sown per hectare [3].

Khasanova F.M., Karaboev I. According to the results, in the conditions of typical gray soils, there is no significant difference in achieving a higher yield of winter wheat when the annual rate of mineral fertilizers is $N_{200} R_{140} K_{100}$ kg per hectare, and when the seeds are planted at 225 and 200 kg, when sowing at higher rates, wheat dormancy is observed. At the rate of planting 150 kg per hectare, 47.9 centners and 42.5 centners of grain were grown at the expense of 100 kg planting [11].

Tojiev M., Khushmanov O. stated that in the Sherabad oasis of Surkhandarya region, they planted autumn soft wheat seeds at the rate of 150, 200, 250 kg/ha and studied by feeding them with different fertilizer rates. The authors who drew conclusions from the results of the experiment noted that the yield was higher (59.4 t/ha) in the case of sowing 200 kg/ha of seeds in all fertilizer rates, and recommended to plant 200-225 kg of seeds per hectare and fertilize in the amount of $N_{200} R_{140} K_{100}$ [10].

Turaev R.A., Turaev A.A. In the gray soils of the Karshi desert of Kashkadarya region, 60 t/ha of winter wheat varieties "Yonbosh", "Sanzar-8" and 70-80 t/ha of "Yuna" and "Skifyanka" varieties are applied per hectare, 4.5-5, 0 million It is desirable to plant fertile seeds [9].

5 million tons of autumn soft wheat. in terms of seed sowing, when the "Nadir variety is planted from September 15 to October 1, and the "Qadr" variety is planted from October 1 to October 15, it is possible to get the best grain yield from them [13].

Seed rate is 3 to 6 million seeds per hectare, average there may be 4.5-5 million seeds. With an average weight of 40-47 grams per thousand seeds, we estimate the planting weight from about 180 to 250 kg/ha, all depending on the planting zone, weather and climate conditions, and seed growth [14].

In order to achieve high yield of winter soft wheat, grain technological quality indicators, and productivity indicators, as a result of the implementation of development of



optimal planting standards, reduction of excess seed consumption, as well as taking into account the biological characteristics of each variety for uniform collection of seeds in each region, soil climatic conditions and field conditions. In this case, it was studied whether it is appropriate to set the standards for planting seeds.

RESEARCH METHODOLOGY.

The field experiments were conducted in the conditions of the meadow soils of the experimental field of the Scientific Research Institute of Cereals and Legumes, Andijan District, Andijan Region.

"Metody agrokhimicheskikh analizov pochvy i rasteniy" (Tashkent, 5-izd. 1977), phenological observations in the agrochemical analysis of the soil Methodological manual of the Scientific Research Institute of Plant Science (VIR) (M. 1977), "State variety testing of agricultural crops" transfer methodology" (M.1989) methodological manuals were used. In determining the economic efficiency, the manual "Methodology of the economic efficiency of using the results of scientific-research and experimental construction works, new technologies, inventions and rationalization proposals in agriculture" (M. Kolos, 1987) was used.

The duration of planting of 3 varieties of soft winter wheat is studied in the conducted scientific research. Field experiment 1 period on October 15, consisted of 12 options at four different planting rates (3 mln., 4 mln., 5 mln., 6 mln.).

EXPERIMENTAL RESULTS.

It was observed that increasing planting rates in winter wheat varieties had an effect on plant growth and development phases and plant biometric indicators.

Seeding rate is 3 mln. It was observed that the height of the plant was 83.1 sm in the Grom standard variety, 82.4 sm in Alekseichnavi, and 91.2 sm in the Antonina variety, and 9.0 sm higher compared to the standard in the variants in the field planted with germinating seeds.

The planting rate of the experiment is 4 mln. in the variants on the field where one germinating seed was sown, the average plant height was 83.4 sm in Grom model variety, in Alekseichnavi plant height was 84.6 sm compared to the model, by 1.2 sm compared to the model, in Antonina variety it was 92.5 sm compared to the model, 9.1 sm It was found that the plant was tall.

Planting rate is 5 mln. in the variants on the field where one germinating seed was planted, the average plant height was 87.2 sm in Grom model variety, in Alekseichnavi plant height was 86.1 sm compared to the model, by 1.1 sm compared to the model, in Antonina variety it was 94.5 sm compared to the model, by 2.7 sm. it was determined that the plant was tall.

Planting rate is 6 mln. in the variants on the field planted with germinating seeds, the average plant height was 89.1 sm in Grom model variety, while in Alekseichnavi plant height was 89.3 sm compared to the model, by 0.2 sm compared to the model, in Antonina variety it was 98.7 cm, compared to the model by 9.6 sm was found to be tall.

It can be seen from the given data that the height of the plants increased with the increase of seeding rate. But it was found that the average number of grains in one ear decreased to 3-4 grains and the weight of grain in one ear decreased to 0.1-0.2 grams.

The 1000-grain weight, which is considered as one of the quality indicators of the grain grown in the experimental field, was different at different seeding rates. 3 mln. 1,000 grains weight of 1000 grains in the field of seeded varieties is 41.5 g. and 42.1 g in Alekseich variety. 0.6 g in relation to the sample. ha, 43.0 g in the Antonina variety. 1.5 g in relation to the sample. to, was found to be high.

4 mln. 1,000 grains weight of 1000 grains in the field of seeded varieties is 41.3 g. and 42.0 g in the Alekseich variety. 0.7 g in relation to the sample. ha,



42.6 g in the Antonina variety. 1.3 g in relation to the sample. ha, 5 mln. 1,000 grains weight of 1000 grains in the field of seeded varieties is 40.9 g in Grom model variety. and 41.5 g in Alekseich variety. 0.6 g in relation to the sample. ha, 41.9 g in the Antonina variety. 1.0 g in relation to the sample. a lot, 6 mln. 1000 grains weight of 1000 grains in the field of seeded varieties is 40.8 g. and 41.0 g in the Antonina variety. 0.2 g in relation to the sample. ha, 40.2 g in the Alekseich variety. 0.6 g in relation to the sample. ga, it was found to be low.

The biological yield values obtained from the experimental area were as follows. 3 million of experience. 61.7 t/ha biological grain yield was obtained from the Grom model variety in the area planted with one germinating seed, while 61.3 t/ha biological grain yield was obtained from the Antonina variety, 0.4 t/ha compared to the model variety, and 62.3 t/ha from the Alekseich variety. It was found that the biological grain yield was 0.6 t/ha compared to the sample variety, and more grain yield was obtained.



Table 1

Biometric indicators of autumn soft wheat varieties studied in the experiment

τ/p	Varieties name	Plant height, sm	spike length, sm	The number of spikes in one spike, pcs	The number of grains in one spike, piece	Grain weight in one ear, g.	The number productive stems per 1m ² , piece	1000 grain weight, g.	Biological harvest needs/ha
The rate of sowing seeds is 3 mln. piece									
1	Grom (template)	83,1	7,1	16	34	1,41	437	41,5	61,7
2	Alexeich	82,4	7,5	16	34	1,43	435	42,1	62,3
3	Antonina	91,2	8,1	17	33	1,42	432	43,0	61,3
Seed planting rate is 4 mln. piece									
1	Grom (template)	83,4	7,4	17	33	1,36	505	41,3	68,8
2	Alexeich	84,6	7,6	16	35	1,47	502	42,0	73,8
3	Antonina	92,5	8,3	17	33	1,40	497	42,6	69,8
Seed planting rate is 5 mln. piece									
1	Grom (template)	87,2	7,5	17	33	1,35	543	40,9	73,2
2	Alexeich	86,1	8,0	15	35	1,45	551	41,5	80,0
3	Antonina	94,5	8,6	17	32	1,34	540	41,9	72,4
Seed planting rate is 6 mln. piece									
1	Grom (template)	89,1	7,7	16	30	1,22	558	40,8	68,3
2	Alexeich	89,3	7,8	14	32	1,28	561	40,2	72,1
3	Antonina	98,7	8,9	15	30	1,23	562	41,0	69,1

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The grain quality indicators of the varieties planted in different standards according to each option and returns - gluten content, group, IDK, grain nature, grain glossiness, 1000 grain weight were analyzed in laboratory conditions in 2019-2021.

According to the given information, the rate of seed sowing of grain by varieties is 3 million, 4 million, 5 million, 6 million. It was observed that grain nature decreased with increasing seeding rate. 3 and 4 mln. 5 million. in the range of 792-800 grams, 6 mln. was found to be in the range of 790-798 grams.

The norm of sowing seeds in the amount of gluten is 3 mln., 4 mln., 5 mln., 6 mln. It was observed that the amount of gluten in the grain decreased with the increase of seeding rate. The highest figure is 3 million. It was seen that the grain was in the range from 28.7 percent to 30.1 percent in the varieties when it was planted in the norm. It was determined that the grain group was the same in all seeding standards, and the Alekseich variety belonged to the I-group, and the Antonina variety belonged to the II-group.

The weight of 1000 grains is different in the sowing standards, and the seed sowing standards are 3 mln., 4 mln., 5 mln., 6 mln. It was observed that the weight of 1000 grains decreased with the increase in grains. The highest figure is 3 million. It was seen that the average weight of the seed was between 41.3 and 43.0 grams per seed. The lowest figure is 6 million. It was determined that the grain size was in the range of 40.2 to 41.0 grams in the varieties when the seeds were sown.

Also, it is ensured that the technological quality indicators of the grain meet the industrial requirements, along with obtaining a high yield from winter wheat varieties. The correct selection of winter soft wheat varieties, the development of agrotechnics for their cultivation for each region ensured an increase in grain yield by 25-30%, as well as an increase in technological quality indicators of grain.

According to his information, 3 million of the experiment conducted during 2020-2021. On average, 60.2 t/ha grain yield was obtained from the Grom model variety in the version planted with 1 germinating seed, while from the Antonina variety it was found that grain yield of 59.9 t/ha was 0.3 t/ha less compared to the model variety, while 61.0 t/ha grain yield was obtained from the Alekseich variety and 0.8 t/ha compared to the standard variety, it was found that a large grain yield was grown.

4 million of experience. 67.5 t/ha grain yield was obtained from the Grom model variety in which one germinating seed was planted, while Antonina yield was 68.3 t/ha, 0.8 t/ha compared to the model, Alekseich variety 74.1 t/ha compared to the model 6 more than 6 ts/ha, 5 mln. 72.7 t/ha grain yield was obtained from the Grom model variety in which one germinating seed was planted, while 72.3 t/ha grain yield was obtained from the Antonina variety, which is 0.4 t/ha less compared to the standard variety, while the yield of the Alekseich variety is 80.4 t per ha compared to the standard by 7.7 ts/ha, 6 mln. 67.2 t/ha grain yield was obtained from the Grom standard variety in the version planted with germinating seeds, while Antonina yield was 67.9 t/ha compared to the standard 0.7 t/ha, and 71.1 t/ha grain yield was obtained from the Alekseich variety. It was found that a lot of grain yield was grown in the amount of 3.9 tons/ha compared to the standard variety.

In the conducted field experiments, the highest yield of autumn soft wheat varieties was 5 million on October 15. It was found that the yield of the Alekseich variety planted at the rate of one fertile seed was 80.4 t/ha, which was 7.7 t/ha more than the standard Grom variety.

So, on October 15, 5 mln. Sowing at the rate of 1 viable seed is the most optimal method of sowing seeds, and following the sowing period and the method of sowing seeds will create a basis for getting a good harvest from the variety.



CONCLUSION.

In this place, it can be said that with the increase in the rate of sowing of seeds, in the process of growth and development, the height of the plants is high and, accordingly, the yield is also high in the conducted scientific researches. 3-4 mln. increase from 5-6 mln. to 1000 vani 1-1.5 g. led to a decrease. The norm of sowing seeds in the amount of gluten is 3 mln., 4 mln., 5 mln., 6 mln. it was observed that the amount of gluten in the grain decreased with the increase of seeding rate. the highest figure is 3 million. It was observed that the grain yield was in the range of 28.7% to 30.1% in varieties when it was planted normally.

Studying the economic efficiency of the conducted field experience is important for its future introduction into production.

In our conducted experiments, economic efficiency indicators were higher in our variant planted with 5 million seeds compared to the rest of the variants. Compared to Grom variety, higher efficiency was achieved by 4.2% in foreign Alekseich variety, while Antonina variety had lower efficiency indicators by 0.2%. 4 mln. 3.5% in the foreign Alekseich variety, 0.4% in the Antonina variety, 6 mln. in our version, in which a single germinating seed was planted, compared to the model Grom variety, the foreign Alexeich variety was 2.1%, the Antonina variety was 0.4%, economic efficiency indicators were higher than the model variety.

So, according to the results of our experiments carried out during the years 2019-2021, the amount of net profit found in the cultivation of high-quality seed grains from winter wheat compared to the sum 5 mln. It was found that in our varieties planted with fertile seeds, the thickness of the seedlings was 2-3% higher than that of the high results, and that the foreign Alekseich variety had higher efficiency indicators compared to the model variety.

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