



## EFFECT OF PLANTING AND MINERAL FERTILIZER RATE ON GROWTH AND DEVELOPMENT OF WINTER WHEAT VARIETIES

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<p><b>Received:</b> 22<sup>th</sup> February 2023 <b>Accepted:</b> 22<sup>th</sup> March 2023 <b>Published:</b> 26<sup>th</sup> March 2023</p>	<p>At present, it is necessary to strengthen selection work to create new intensive type local varieties. It is necessary to achieve the production yield of wheat varieties at least 70-80 s/ha and more and to ensure that they give high-quality products. Foreign varieties grown in Uzbekistan are also very important. It is necessary to thoroughly study the local varieties and samples of these varieties. Because in order to fully provide the population of our Republic with bread and flour products, it is necessary to selectively plant high-yielding varieties that are resistant to diseases, pests and dormancy, suitable for local conditions. That's why there is a need to create new varieties of intensive type that are suitable for different soil and climate conditions of our Republic. (Sanzar-6) and imported (Polovchanka, Demetra) winter wheat varieties, to jointly study the norms of their planting and the norm of mineral fertilizers and introduce optimal options into production in the future. Further strengthening of grain independence in our republic We believe that it will be a positive step.</p>

**Keywords:** Wheat crops, varieties, soil fertility, rate and duration of effect of mineral fertilizers, effect.

Currently, large-scale land reclamation activities and scientific research work are carried out within the framework of state programs for the growth and development of wheat varieties, improvement of land reclamation, preservation, increase of productivity and effective use of irrigated land areas in our republic. results are being achieved. It is known that one of the factors determining the weight of the crop in any type of crop is the seedling thickness (the number of stems). Crops with normal seedling thickness have higher productivity.

The varieties of wheat studied in the experiment we are analyzing are considered biologically autumn. That is why it is necessary to pay attention to the planting period, rate and depth in order to maintain the thickness of seedlings. Basically, before entering the village of wheat, it is necessary to achieve the formation of a joint in it. During the growing season, when the crowding is good, the surface of the leaves produces a large amount of organic matter and side stems are formed. 30-50% of grain yield, and winter wheat frost resistance depends on conditions and age during the growing season.

K.A. Asanov on the dependence of winter resistance of plants on their breakdown and consumption of carbohydrates. According to I. Isakov [page 92] and others, biological characteristics of varieties are also of great importance. If nitrogen fertilizers are used for wheat, the vegetative weight of the plant will increase and winter resistance will decrease.

The relevance of the topic is. The impact of planting standards on the number of wheat varieties and the degree of wintering was determined. When planting 4.0 million seeds per hectare and applying fertilizers at the rate of  $N_{120}R_{90}K_{60}$  kg/ha ("Demetra" variety), the bush loss at the end of the vegetation period was 8.0%, per hectare When 5.0 million seeds were sown and the rate of these fertilizers was applied, it was 9.8% (options 9, 11), or these indicators were corresponding to the variety "Sanzar-6" It was 13.9-18.8% (1, 3 variants), 11.1-14.3% (5, 7 variants) in the "Polovchanka" variety. So, as the rate of planting in winter wheat increases, the rate of plant death also increases. It is known that the role of mineral fertilizers in plant development and productivity is incomparable.

Khalilov N.Kh., Bobomirzaev [2000. 26-28 pages], compared to the data obtained on the effect of mineral fertilizers, the higher rate of mineral fertilizers means that the number of plants in the field will be relatively high. ridden.

Based on the obtained data, it can be concluded that among winter wheat varieties, the loss of the number of stalks is relatively small in the "Demetra" variety. Also, increasing the rate of planting leads to a small loss of the number of bushes.

Stem height, total and number of productive stems of winter wheat. Growth is a change in plant organs (height, number of leaves, weight). Development is qualitative changes in the plant, the formation of generative organs, the transition of the ontogenesis process from one period to the next.

Table 3.1.2 provides information on the influence of different planting and mineral fertilizer rates on the growth and development of winter wheat varieties.

When we analyze the obtained data, it is observed that the rate of sowing and mineral fertilizers affects the growth and development of different varieties of winter wheat in different degrees. In the experiment, the highest values of the plant height, the total number of stems, and the number of productive stems were observed in the winter wheat "Polovchanka" variety. For example, setting the planting rate to 4.0 million pieces per hectare and mineral fertilizers to  $N_{180}R_{120}K_{90}$  kg/ha, the highest plant height is 96.7 cm, the total number of stems is 873.4 m<sup>2</sup>/piece (option 6). At the same rate of planting and mineral fertilizers, these indicators are 87.6 cm, 824.8 m<sup>2</sup>/piece (option 2) in the "Sanzar-6" variety, and 84.6 cm in the "Demetra" variety. , was 839.4 m<sup>2</sup>/piece (option 10).

This pattern was also observed among winter wheat varieties in the variants of the experiment with the planting rate of 5.0 million units per hectare and the mineral fertilizer rate of  $N_{120}R_{90}K_{60}$  kg/ha. It should be noted that in almost all varieties of winter wheat, increasing the planting rate had a negative effect on the height of their height and the total number of stems, but it had a positive effect on the number of stems and the number of productive stems. For example, in the 5th version of the experiment, the planting rate is 4.0 million per hectare. piece, if the height of the wheat stem was 87.8 cm and the total number of stalks was 855.7 m<sup>2</sup>/piece in  $N_{120}R_{90}K_{60}$  kg/ha, using this fertilizer rate in this variety, per hectare 5.0 mln. when planted on the basis of pieces, these indicators are a little low, 82.3 cm - 828.4 m<sup>2</sup> / piece, on the contrary, according to the number of bushes and the number of productive stems, these indicators are respectively 367.6 m<sup>2</sup> / piece - 372 ,3 m<sup>2</sup>/unit (option 5) and 385.5 m<sup>2</sup>/unit-394.1 m<sup>2</sup>/unit (option 7); that is, 5.0 million of the number of bushes and the number of productive stems. it was observed that it was higher when seeds were planted (Charts 3.1.2).

These conditions were repeated in all the remaining winter wheat varieties and in the variants applied to  $N_{180}R_{120}K_{90}$  kg/ha. Also, regardless of winter wheat varieties and sowing rate, the high rate of mineral fertilizers had a positive effect on plant growth and development.

№	Varieties	Planting standard million pieces	Rate of mineral fertilizers, kg/ha	Plant height, cm				Number of bushes, m <sup>2</sup> /pc	Total number of stems, m <sup>2</sup> /pc	The number of productive stems, m <sup>2</sup> /pc
				1.03.	1.04.	1.05.	1.06.			
1.	Sanzar-6	4,0	N <sub>120</sub> R <sub>90</sub> K <sub>60</sub>	10,4	37,1	68,2	84,3	221,4	774,9	318,7
2.			N <sub>180</sub> R <sub>120</sub> K <sub>90</sub>	10,1	45,7	71,2	88,4	238,7	836,5	335,6
3.		5,0	N <sub>120</sub> R <sub>90</sub> K <sub>60</sub>	10,7	33,5	63,3	78,3	283,4	684,3	325,4
4.			N <sub>180</sub> R <sub>120</sub> K <sub>90</sub>	9,8	39,7	67,0	85,5	294,2	767,6	343,1
5.	Polovchanka	4,0	N <sub>120</sub> R <sub>90</sub> K <sub>60</sub>	12,4	45,8	72,4	91,3	234,5	783,7	331,4
6.			N <sub>180</sub> R <sub>120</sub> K <sub>90</sub>	13,0	52,4	77,1	94,5	245,0	846,7	358,2
7.		5,0	N <sub>120</sub> R <sub>90</sub> K <sub>60</sub>	11,0	41,3	67,0	88,0	303,5	755,4	348,7
8.			N <sub>180</sub> R <sub>120</sub> K <sub>90</sub>	11,7	47,6	72,3	89,3	342,3	807,0	378,3
9.	Demetra	4,0	N <sub>120</sub> R <sub>90</sub> K <sub>60</sub>	11,3	35,6	70,0	87,2	231,3	743,2	321,3
10.			N <sub>180</sub> R <sub>120</sub> K <sub>90</sub>	12,1	41,7	77,1	89,9	242,6	791,3	348,6
11.		5,0	N <sub>120</sub> R <sub>90</sub> K <sub>60</sub>	10,1	31,3	64,4	81,0	318,3	704,5	341,2
12.			N <sub>180</sub> R <sub>120</sub> K <sub>90</sub>	10,8	35,5	68,6	86,3	320,3	731,8	356,7

Effect of planting rate on the number of stems, regardless of varieties and planting rate, the high rate of mineral fertilizers had a positive effect on plant growth and development.

Based on the obtained data, it can be concluded that the standard of sowing of winter wheat is 4.0 million per hectare. marking as pieces has a positive effect on the height of the plant and the total number of stems, on the contrary, it has a negative effect on the number of bushes and the number of productive stems, causing their number to be low. Planting rate is high, 5.0 million per hectare. and grain size had a negative effect on the plant height and the total number of stems, and had a positive effect on the number of stems and the number of productive stems. Also, the high rate of mineral fertilizers  $N_{180}R_{120}K_{90}$  kg/ha had a positive effect on all growth and development of the plant and ensured high indicators.

### SUMMARY

Among the varieties of winter wheat, the highest indicator of winter resistance was observed in the "Demetra" variety, the loss of the number of stems during the winter period was 7.0-9.8%. Also, 4 million per hectare of winter wheat. It was observed that the use of mineral fertilizers at the rate of  $N_{180}R_{120}K_{90}$  kg/ha had a positive effect on the level of wintering of winter wheat. Determining the standard of wheat planting at the rate of 5.0 million pieces per hectare increases the number of stems in the plant by 60-80 m<sup>2</sup>/piece, and the number of productive stems by 8.2-19.9 m<sup>2</sup>/piece. provided that.

It was observed that setting the rate of mineral fertilizers at the rate of  $N_{180}R_{120}K_{90}$ kg/ha in winter wheat care resulted in higher plant growth and development in all varieties of winter wheat.

Nitrogen and phosphorus elements in winter wheat are mainly in its root (1.74-1.85%) and ear (0.76-0.97%); It was determined that the potassium element is mainly absorbed by the root (1.74-1.88%) and stem (0.85-1.01%).

Determining the norm of mineral fertilizers at the rate of  $N_{180}R_{120}K_{90}$ kg/ha has a positive effect on the agrochemical parameters of the soil, including the amount of nitrate nitrogen, mobile phosphorus and exchangeable potassium, the preservation of these nutrients in the soil and the good growth of plants. made it possible to develop.

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