THE INFLUENCE OF SEED SOWING RATES ON THE FORMATION OF WINTER WHEAT YIELD

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Annotation: It was established that with a seeding rate of winter wheat of 5 million viable seeds, the highest plant indicators, ear length, number of ears in an ear, number of grains in an ear, weight of 1000 grains and biological grain yield were observed in the Uzbekistan-25 variety.

Key words: Winter wheat, varieties Uzbekistan-25, Navbahor, grain, yield, protein, gluten, sowing rate.

In the agriculture of our republic, especially in the field of grain growing, as a result of the deep reforms carried out, special attention is paid to the creation of high-yielding varieties of wheat, strengthening food security, free choice of varieties for each region, development of norms for the use of mineral and local fertilizers, as well as ensuring a stable harvest in the context of global climate change, efficient use of land and water resources.

On typical chernozems of the Tashkent region, it was found that in order to obtain the optimal sowing rate of winter wheat, it is necessary to use a sowing rate of 225 kg of seeds per hectare [2].

In the conditions of the Bukhara region, for the successful growth and development of winter wheat, it was shown that when sowing seeds at a rate of 200 kg per hectare, high yields can be achieved [1].

On typical chernozems, when using mineral fertilizers at a rate of N200P140K100 kg per hectare, when sowing seeds at a rate of 225 and 200 kg, an insignificant difference in yield is observed, however, with an increase in the sowing rate, lodging of wheat is observed. At a seeding rate of 150 kg per hectare, 47.9 centners were obtained per hectare, and at a rate of 100 kg - 42.5 centners [5].

In the conditions of the experimental farm of the Tashkent State Agrarian University, studies of the Kroshka wheat variety were conducted at five seeding rates: 3, 4, 5, 6, 7 million / ha. The highest yield was obtained at a rate of 5 million / ha, amounting to 45.4 c / ha, and an increase in the rate to 6-7 million / ha led to a decrease in yield to 45.0-42.4 c / ha [3].

In the Sherobod district of the Surkhandarya region, studies were conducted with different seeding rates of winter wheat seeds (150, 200, 250 kg / ha) and fertilizers. The results of the research indicated that the seeding rate of 200 kg/ha yielded the highest amount of grain (59.4 c/ha). Based on this, the authors recommended using a seeding rate of 200-225 kg of seeds and applying N200P140K100 fertilizers [4]. The study will examine the effect of seeding rates on three varieties of winter wheat. The experiment will be conducted with four seeding rates (3 million, 4 million, 5 million, 6 million) in 12 variants. The area of each plot will be 14 meters long and 1.8 meters wide, while the wheat seeds will be sown in a strip with 80 cm row spacing. The Grom, Uzbekistan-25 and Navbahor varieties were used for the experiment. Before sowing, the main fertilizers will be applied to the field: P - 90 kg of phosphorus and K - 60 kg of potassium, as well as nitrogen fertilizers at a rate of 220-230 kg per hectare. Subsequently, three additional fertilizing will be carried out using 70, 80 and 70 kg of nitrogen fertilizers.

According to observations, the duration of the vegetation period of the Grom variety was 227 days, for the Uzbekistan-25 variety - 229 days, and for the Navbahor variety - 225 days, which is two days earlier compared to the Grom variety.

When increasing the sowing rate, it was noted that this affects the growth and development phase of plants, as well as their biometric indicators. With a sowing rate of 3 million viable seeds, the average plant height was: for the Grom variety -

83.1 cm, for Uzbekistan-25 - 82.5 cm (0.6 cm lower than the Grom variety), for Navbahor - 91.3 cm, 8.2 cm higher than the Grom variety.

At the sowing rate of 4 million seeds, the plant height was: for the Grom variety - 83.4 cm, for Uzbekistan-25 - 85.0 cm, 1.6 cm higher than for the Grom variety, for Navbakhor - 94.2 cm, 10.8 cm higher than for the Grom variety. At the sowing rate of 5 million seeds, the plant height was: for the Grom variety - 87.2 cm, for Uzbekistan-25 - 86.3 cm, 0.9 cm lower than for the Grom variety, for Navbakhor - 95.6 cm, 8.4 cm higher than for the Grom variety. At the sowing rate of 6 million seeds, the plant height was: for the Grom variety - 89.1 cm, for Uzbekistan-25 - 90.2 cm (1.1 cm higher than for the Grom variety), for Navbakhor - 97.0 cm, 7.9 cm higher than for the Grom variety. Thus, with an increase in the sowing rate, the height of the plants also increases. It was also found that with a sowing rate of 3 million viable seeds, the ear length of the Grom variety was 7.1 cm, for Uzbekistan-25 - 7.3 cm, 0.2 cm shorter than the Grom variety, for Navbakhor - 9.1 cm, 2.0 cm longer than the Grom variety. With a sowing rate of 4 million seeds, the ear length was: for the Grom variety - 7.4 cm, for Uzbekistan-25 - 7.5 cm, 0.1 cm longer than the Grom variety, for Navbakhor - 9.3 cm, 1.9 cm longer than the Grom variety. When sowing 5 million viable seeds on a plot with the Grom variety, the average ear length was 7.5 cm, for the Uzbekistan-25 variety - 7.7 cm, which is 0.2 cm more than the Grom variety. For the Navbahor variety, the ear length was 9.5 cm, which is 2.0 cm more than the Grom variety. With a sowing rate of 6 million viable seeds, the average ear length for the Grom variety was 7.7 cm, for the Uzbekistan-25 variety - 7.8 cm, and for the Navbahor variety - 9.7 cm, which is 2.0 cm more than the Grom variety. However, the number of grains in one ear decreased by 3-4 grains, and the weight of one grain decreased by 0.1-0.2 grams. One of the indicators of grain quality is the weight of 1000 grains. At the sowing rate of 3 million viable seeds, the weight of 1000 grains was: for the Grom variety - 41.5 g, for the Uzbekistan-25 variety - 41.8 g (0.3 g more

than the Grom variety), for the Navbakhor variety - 40.4 g, 1.1 g less than the Grom variety.

At the sowing rate of 4 million seeds, the weight of 1000 grains was: for the Grom variety - 41.3 g, for the Uzbekistan-25 variety - 41.6 g, 0.3 g more than the Grom variety, for the Navbakhor variety - 39.2 g, 2.1 g less than the Grom variety.

At the sowing rate of 5 million seeds, the weight of 1000 grains was: for the Grom variety - 40.9 g, for the Uzbekistan-25 variety - 40.7 g, 0.2 g less than for the Grom variety, for the Navbahor variety - 38.3 g, 2.6 g less than for the Grom variety. At the sowing rate of 6 million seeds, the weight of 1000 grains was: for the Grom variety - 40.8 g, for the Uzbekistan-25 variety - 39.8 g, 1.0 g less than for the Grom variety, for the Navbahor variety - 38.0 g, 2.8 g less than for the Grom variety.

The biological yield indicators obtained in the experiment are as follows: With a sowing rate of 3 million viable seeds, the biological yield of the Grom variety was 61.7 c/ha, for the Navbakhor variety - 61.5 c/ha, 0.2 c/ha less than the Grom variety, for the Uzbekistan-25 variety - 62.7 c/ha, 1.0 c/ha more than the Grom variety.

With a sowing rate of 4 million seeds, the biological yield of the Grom variety was 68.8 c/ha, for the Uzbekistan-25 variety - 73.8 c/ha, 5.0 c/ha more than the Grom variety, for the Navbakhor variety - 69.7 c/ha (0.9 c/ha more than the Grom variety).

With a sowing rate of 5 million seeds, the biological yield of the Grom variety was 73.2 c/ha, of the Navbakhor variety - 74.4 c/ha (1.2 c/ha more than the Grom variety), of the Uzbekistan-25 variety - 79.8 c/ha, 6.6 c/ha more than the Grom variety.

With a sowing rate of 6 million seeds, the biological yield of the Grom variety was 68.3 c/ha, of the Navbakhor variety - 68.9 c/ha, 0.6 c/ha more than the Grom variety, of the Uzbekistan-25 variety - 70.8 c/ha, 2.5 c/ha more than the Grom

variety. Based on the conducted field experiments, it can be concluded that with a sowing rate of 5 million viable seeds for the Uzbekistan-25 variety, the best results were obtained in terms of such indicators as plant height, ear length, number of ears, number of grains in an ear, grain weight, weight of 1000 grains and biological yield.

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