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INFLUENCE OF SEED FRACTIONS AND FEEDING ON YIELD AND QUALITY OF BARLEY GRAIN

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Abstract:

Cereals, including barley, are highly resistant to sprouting and other stressors. The article examines the influence of fractions of seeds of barley varieties barley on the yield and technological quality of grain.
For this, the seeds of barley varieties are first sown in early spring on a 1.7 mm sieve with a hole, then they are divided into fractions of 2.5, 2.0 and 1.7 mm.

Keywords: Barley, Kizilkurgan, grain, sieve, fraction, quality, yield.

INTRODUCTION.

One of the important problems of agriculture in the southern regions of Uzbekistan is the adverse weather conditions associated with wind erosion, where strong and hot winds in the region occur at any time of the year in which they negatively affect the yield and quality of agricultural products.

Barley is one of the stable crops on wind erosion associated with fertilization in barley occur, inside covered with leaf. Therefore, barley is included in the main crops that are grown in this region.

PURPOSE AIM THE RESEARCH.

The purpose of the research is the development of methods to overcome the negative impact of wind erosion by sowing highly fractional seeds with optimization of fertilizing with mineral fertilizers.

MATERIALS AND METHODS.

To solve the tasks, field experiments were carried out in 2015-2017 at the farm Saipov Shahboz in the Kasan district of the Kashkadarya region of Uzbekistan.

For field experiments, different fractions of barley seeds (2.5x20 mm, 2.0x20 mm and 1.7x20 mm) and top dressing with the recommended ($N_{180}P_{90}K_{60}$) and increased ($N_{210}P_{105}K_{70}$) norm and the ratio of mineral fertilizers were used. The full annual norms of phosphorus and potassium fertilizers and half of the annual norm of nitrogen fertilizers were taken with sowing of barley seeds at the end of February. The second half of the norm of nitrogen fertilizers was taken in the first watering. The experiments were carried out fourfold, the size of the plot of 180 m^2, the accounting plot of 100 m^2.

The results and discussion. As shown by the results of our research by sowing highly-fractional barley seeds and top dressing with an optimal rate and the ratio of mineral fertilizers, allow successful overcoming the negative effects of wind erosion and allow the cultivation of high and high-quality barley grain crops.

When sowing highly fractional seeds of Kizilkurgan barley and optimizing top dressing with mineral fertilizers, the field germination rate of seeds is 90.0%, due to healthy and strong seedlings, bushiness increases to 0.4-0.7 pieces, the formation of organic substances on 10 plants increases to 6, 1 g, the sugar content at the tillering node is increased to 13.8%, the length of the growing season is reduced to 7 days, the conservation of the plant by 1m - 2 until the end of the growing season is increased to 9-10 pieces, the elongation of the spike is up to 0.4 cm, quality seed on the spike is increased to 1.8 pieces, the ears with grains are compacted, the grain yield increases to 10.1%, as a result of which, due to the high-fraction seeds, the grain yield increases to 3.7 centner/ha.

During optimization, nutrition with mineral fertilizers of high-fraction seeds increases to 6.1-6.5 kg/ha in comparison with control variants of the experiment where mineral fertilizers were not taken. And due to mineral fertilizers, the total yield of barley seeds of the Kizilkurgan variety is increased to 44.0 c/ha.

Along with an increase in the grain yield of barley of the Kizilkurgan variety, grain quality is noticeably improved due to the sowing of high-fraction barley seeds and optimization of fertilizing with mineral fertilizers, as a

result of which the barley grain fractions increase to 20 g, the weight of 1000 seeds to 3 g, and the natural weight decreases to 9.9 -11.9 g/l, glassiness improves to 4%, the yield of croup to 5% and barley to 5-6%.

By sowing highly barley seeds and optimizing top dressing with mineral fertilizers, the amount of protein in the grain increases to 0.6%, starch to 7-8%, nitrogen-free extraction substances to 0.6-1.2% and minerals to 0.2-0 , 3% compared with control variants of the experiment where mineral fertilizers were not taken.

As a result of sowing highly fractional seeds of Kizilkurgan barley and optimization of fertilizing with mineral fertilizers, net income increases to 122007-255185 sum / ha and profitability up to 4.6-9.3% compared with control options where mineral fertilizers were applied.

During the production test of a test variant where high-fraction seeds of Kizilkurgan barley (2.5x20 mm) were sown and fertilizing with mineral fertilizers ($N_{210}P_{105}K_{70}$) was optimized, the difference between field and production tests was only 1.2-2.55 c/ha, which speaks of the reliability research.

CONCLUSIONS.

Sowing barley seeds with a high content of fractions and optimizing fertilization with mineral fertilizers is one of the ways to successfully overcome the negative impact of wind erosion, which can also increase the yield of barley and the quality of seeds.

Based on our experience in obtaining abundant and high-quality barley on irrigated areas of light gray soils in the southern region of the country, sowing and feeding selected barley seeds of 2,5x20 mm fraction of the Kizilkurgan variety exceeded the norm ($N_{210}P_{105}K_{70}$).

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