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THE EFFECT OF MINERAL FERTILIZER STANDARDS AND IRRIGATION REGIME ON GERMINATION, PLANT DENSITY, GROWTH AND GRAIN YIELD OF INTER BARLEY VARIETIES

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Abstract: the norms of mineral fertilizers and irrigation regime for germination, plant density, growth and grain yield of winter barley varieties are described by the results of a study to identify the norms of mineral fertilizers, timing, norms and irrigation regimes for seed germination.

Keywords:the net productivity of photosynthesis, the periods of harvest and harvesting of tubes, the periods of milk maturation and wax ripeness, mineral fertilizers, irrigation, soil moisture relative to MFMC, the order of watering, the variety "Bolgali", the variety "Ihtiyar".

Аннотация:норм минеральных удобрений и режима орошения на всхожесть, густоту стояния растений, рост и урожайность зерна сортов озимого ячменя изложены результаты исследования по выявлению норм внесения минеральных удобрений, сроков, норм и режимов орошения на всхожесть семян.

Ключевые слова:чистая продуктивность фотосинтеза, периоды сбора урожая и сбора трубок, периоды созревания молока и восковой спелости, минеральные удобрения, полив, влажность почвы относительно ППВ, порядок полива, сорт "Болгали", сорт "Ихтияр".

When analyzing the effect of mineral fertilizers and irrigation regimes on the germination of winter barley varieties, no significant differences were found between the variants in field germination and seed germination. But after wintering and at the end of the growing season, when studying the density of plants, a significant effect of mineral fertilizers and irrigation regimes was noted.

In particular, in the variant when growing winter barley of the Bolgali variety with the application of mineral fertilizers at the rate of $N_{180}P_{126}K_{162}$ kg/ha, after wintering in irrigation mode with soil moisture before watering of 70-80-60% of MFMC, the density of standing was 311.6 pcs/m2, the actual density at the end of the growing season was 300.9 pcs/m2, respectively, the winter hardiness of plants was 85.8%, where the number of seedlings, relatively hardy compared to the variants, under this irrigation regime and the application of mineral fertilizers at the rate of $N_{150}P_{105}$K135 and N120P85K110 kg/ha is higher by 6.5-13.3 pcs/m2, the actual density of seedlings at the end of the growing season is higher by 9.1- 20.3 pcs/m2, the winter hardiness of plants is higher by 2.3-5.9%, in variants with sowing of the Ichthyar variety with mineral fertilizers applied at the rate of $N_{180}P_{126}K_{162}$ kg/ha and irrigation with an irrigation regime of 70-80-60% of the total, the number of hardy seedlings was 311.6 pcs/m2, and the actual density of standing at the end of the growing season was 301.4 pcs/m2, winter hardiness of In the variant with an irrigation regime with soil moisture of 60-70-60% of MFMC and the application of mineral fertilizers at the rate of $N_{180}P_{126}K_{162}$ kg/ha during the growing season, the number of plants after wintering on winter barley crops was 304.5 pcs/m2, the actual density of plants at the end of the growing season was 292.1 pcs/m2, and the winter hardiness

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of plants was 83.6%, which is compared with the variants with the same irrigation regime using mineral fertilizers with the norm of $N_{150}P_{105}K_{135}$ and $N_{120}P_{85}K_{110}$ kg/ha.

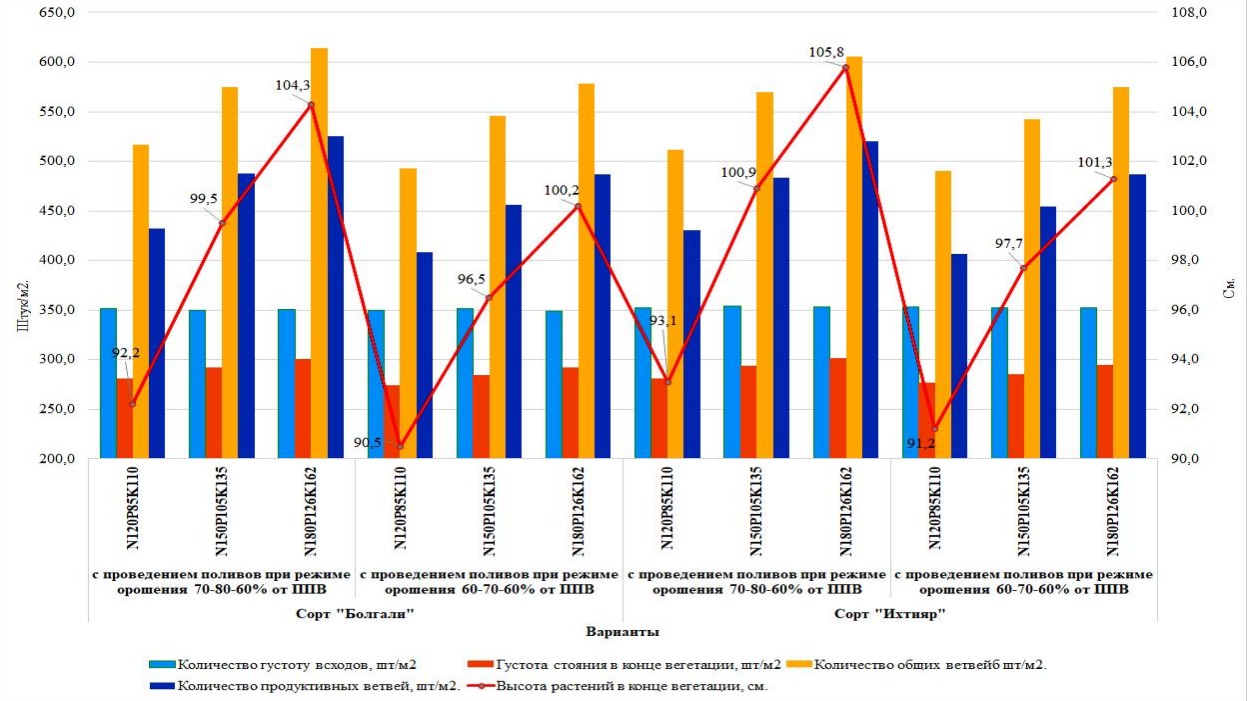

Figure 1. The effect of irrigation regimes and mineral fertilizer standards on biometric indicators of winter barley varieties

the number of plants after wintering is higher by 6.1-11.8 pcs./m2, the actual density of plants at the end of the growing season is 7.7-18.4 pcs./m2, the winter hardiness of plants is 2.6-5.4%, when sowing winter barley of the Ichthyar variety with the use of mineral fertilizers with a norm of N180P126K162 kg/ha and irrigation regime with soil moisture before watering 60-70-60% of the total, the number of plants after wintering was 306.1 pcs./m2, the actual density of plants at the end of the growing season was 294.6 pcs./m2, the winter hardiness of plants was 83.6%, where, compared with the variants with the same irrigation regime using mineral fertilizers, the norm of N150P105K135 and N120P85K110 kg/ha, the number of plants after wintering increased by 7.6-11.6 pcs./m2, the actual density of plants at the end of the growing season – 9,4-17,6 pcs. / m2, winter hardiness of plants – 2,6-5.4%.

When analyzing the irrigation needs of winter barley varieties in the context of irrigation regimes, it was found that in the variants under the irrigation regime with a pre-irrigation soil moisture of 70-80-60% of the total, a total of 5 irrigations were carried out according to the 2-2-1 scheme during the growing season, and the irrigation water rate was 4540 m3/ha, variants with the cultivation of barley varieties with soil moisture before watering of 60-70-60 Irrigation was carried out only 4 times according to schemes 1-2-1 with an irrigation rate of 4050 m3/ha, where the water economy was 490 m3/ha compared to options with an irrigation regime of 70-80-60% of the total.

When determining the impact of agrotechnical measures applied in the context of variants, it was noted that relatively high results in the height of stems, the number of common and productive stems of winter barley varieties during both irrigation regimes with the norm of mineral fertilizers $N_{180}P_{126}K_{162}$ kg/ha during the growing season.

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