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METHODS OF SOIL PROCESSING, THE INFLUENCE OF SOWING NORMS AND MINERAL FERTILIZERS ON THE PROCESSES OF IRRIGATION EROSION OF THE SOIL

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ANNOTATION

This article describes the effects of elements of agronomic measures (tillage methods, seed sowing and mineral fertilizer norms) applied to irrigation water and erosion processes used in the care of winter wheat on irrigated eroded lands.

АННОТАЦИЯ

В этой статье описываются последствия элементов агрономических мер (методы обработки почвы, нормы посева семян и минеральных удобрений), применяемые к поливам и эрозионному процессам, используемыми в заботе о зимой пшеницы на орошаемых эродированных землях.

Keywords: soil cultivation methods, seed sowing and mineral fertilizer standards, soil soaking water, sewage, soil particle washing, irrigation erosion processes.

Ключевые слова: методы культивирования почвы, стандарты посева семян и минеральных удобрений, замачивание почвы, воду, сточные воды, промывание частиц почвы, процессы эрозии ирригации.

INTRODUCTION

Water is the source of life. From ancient times, our people considered water as a priceless gift of nature and paid attention to its saving and rational use. It is known that under the influence of irrigation erosion, the highest, most fertile layers of soil are washed away. When crops were irrigated, irrigation erosion, i.e., soil particles released by wastewater and the amount of nutrients they contained, varied. It does not lead to the conclusion that the more wastewater is released, the more soil particles are washed away, which depends primarily on the degree of erosion of the field, ie its slope and soil structure.

RESEARCH METHODOLOGY

Scientific studies have been conducted to study the impact of agronomic measures on erosion processes for the care of winter wheat in irrigated eroded lands (Table 1). Methods of conducting field experiments. Toshkent 2007 y. The methodological manual was used.

RESEARCH RESULTS

Irrigation rates in irrigated agriculture vary depending on crop demand. In the first irrigation of winter wheat, the same 900 m^3 / ha of water was applied in all three tillage methods. The amount of water consumed was 730 m^3 / ha in the normally irrigated variants, which was planted between rows of wheat and cotton, and 170 m^3 / ha in the ditch. these laws have been preserved. 4 million seeds per hectare were sown between rows of cotton and 2880.6 m^3 / ha of water was applied to the variant with low amount ($N_{150}P_{105}K_{75}$ kg / ha) of mineral fertilizers, 2092.2 m^3 / ha of water was absorbed into the soil and 788.4 m^3 of water was discharged into the sewer. was found to be /.

Table 1. Experience system

№	Soil cultivation methods			The sowing rate is in the millions	Amount of mineral fertilizers, kg / ha
1	Planting by cultivating at a depth of 12–14 cm between rows of cotton	Chisel planting (16-18 cm deep)	In the autumn plow to a depth of 28–30 cm	4	N_{150} P_{105} K_{75}
2				4	N_{200} P_{140} K_{100}
3				4	N_{250} P_{175} K_{125}
4				5	N_{150} P_{105} K_{75}
5				5	N_{200} P_{140} K_{100}
6				5	N_{250} P_{175} K_{125}
7				6	N_{150} P_{105} K_{75}
8				6	N_{200} P_{140} K_{100}
9				6	N_{250} P_{175} K_{125}

In the inter-row sowing of cotton, the sowing rate of winter wheat was 5 million seeds per hectare, while the amount of water absorbed into the soil increased compared to the sowing of 4 million seeds, and the amount of water discharged into the effluent decreased. According to him, the amount of water absorbed into the soil is 2127.3 in options 4, 5 and 6 in accordance with the norms of mineral fertilizers; 2135.8 va
2147.8 m^3 / ha, and the amount of water leaving the sewer is 750.0 according to the options; 740.3 and 718.7 m^3 / ha, respectively.

The sowing rate of winter wheat is set at 5 million seeds per hectare, and the amount of water flowing into the sewer is 728.7; 743.6 and 701.4 m^3 / ha, the amount of water absorbed into the soil in this variant of tillage in the method of sowing 6 million seeds per hectare, 1977.4; 2127.3 and 2048.3 m^3 / ha, the amount of water discharged into the sewer was 648.3, respectively; 625.6 and 581.4 m^3 / ha, respectively.

The amount of water absorbed into the soil in variants 22, 23 and 24, applied at the rates of mineral fertilizers $N_{150}P_{105}K_{75}$, $N_{200}P_{140}K_{100}$ and $N_{250}P_{175}K_{125}$ kg / ha, increased the sowing rate by 5 million units per hectare, 2186.5; 2271.5 and 2279.1 m^3 / ha, and the amount of wastewater was 704.5, respectively; 697.4 and 678.6 mThe amount of water absorbed into the soil in variants 22, 23 and 24, applied at the rates of mineral fertilizers $N_{150}P_{105}K_{75}$, $N_{200}P_{140}K_{100}$ and $N_{250}P_{175}K_{125}$ kg / ha, increased the sowing rate by 5 million units per hectare, 2186.5; 2271.5 and 2279.1 m^3 / ha, and the amount of wastewater was 704.5, respectively; 697.4 and 678.6 m^3 / ha, respectively. / ha, respectively. According to the results of the analysis, in the 27th variant,

where 6 million seeds were sown per hectare, the amount of water absorbed by the field increased by 151.5-340.6 m^3 / ha, and the amount of effluent increased compared to the variants. A decrease of 144.3-77.2 m^3 / ha was found.

Thus, the results of the study show that the rate of mineral fertilizers increases with increasing soil fertility, the physical properties of the soil are better during the main tillage, and the number of plants increases with the increase in planting rates. while it was found to have caused a decrease.

Washing of soil particles as a result of irrigation of winter wheat As a result of irrigation of winter wheat sown between rows of cotton, seedlings were sown at the rate of 4 million seedlings per hectare during the season. in the variants where the norm was increased to $N_{200}P_{140}K_{100}$ and $N_{250}P_{175}K_{125}$ kg / ha, it was found that the leaching of soil particles was 12.6 and 12.3 t / ha, respectively.

When winter wheat was sown at a rate of 5 million seeds per hectare between rows, it was observed that the leaching of soil particles decreased compared to the sowing of 4 million seeds. According to him, as the rate of mineral fertilizers increases, the leaching of soil particles in options 4, 5 and 6, respectively, is 11.6; 11.1 and 10.8 t / ha, respectively. In options 7, 8 and 9, where the sowing rate was increased to 6 million, the washing of soil particles was slightly less and 10.2 in accordance with the fertilization standards; Were 9.5 and 9.0 t / ha (Figure 1).

The experimental options were chiseled and 4 million seeds were sown per hectare, and when the mineral fertilizers were applied in small amounts, the leaching of soil particles was 13.9 t / ha. However, in the variants where the mineral fertilizer standard was increased to $N_{200}P_{140}K_{100}$ and $N_{250}P_{175}K_{125}$ kg / ha, it was observed that soil particle washing was slightly reduced and soil particle washing was 13.4 and 12.9 t / ha, respectively.

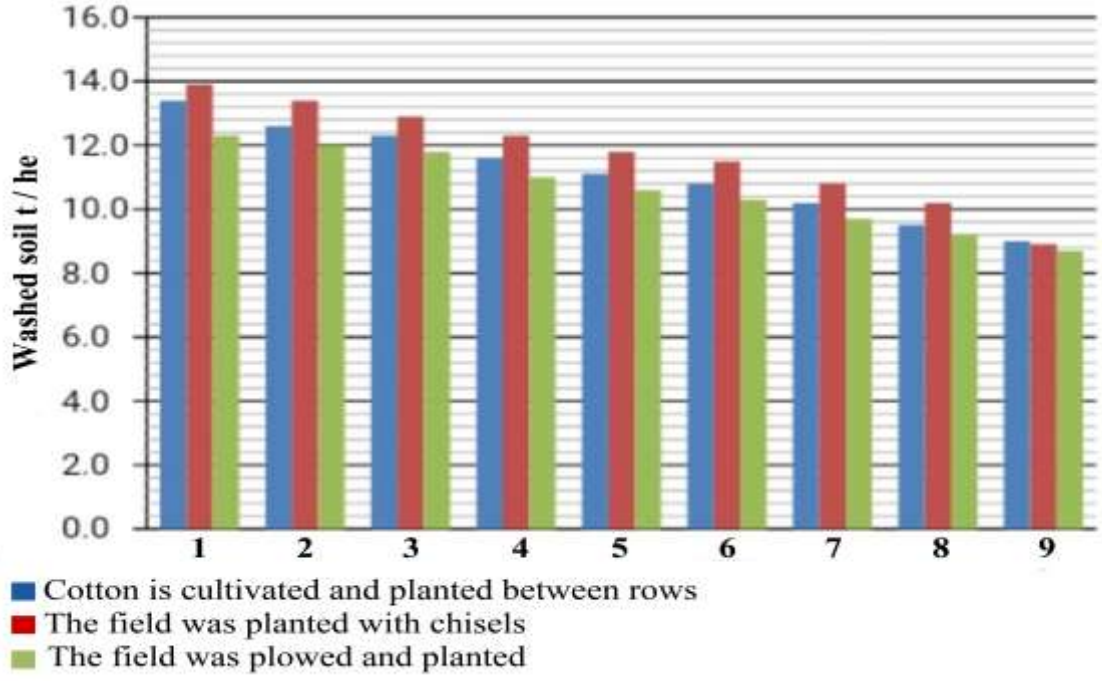

Figure 1. Soil cultivation methods, the effect of seed sowing and mineral fertilizer standards on soil particle washing, t / ha

When the sowing norm of winter wheat is set at 6 million seeds per hectare, the leaching of soil particles is 3.1 in accordance with the norms of mineral fertilizers in comparison with the variant of sowing seeds at the rate of 4 million seeds; 3.2 and 3.0 t / ha less washed.

When the experimental field was plowed and 4 million seeds of winter wheat were sown per hectare and mineral fertilizers were applied at the rate of $N_{150}P_{105}K_{75}$ kg / ha, the leaching of soil particles was 12.3 t / ha. the index was found to be 12.0 and 11.8 t / ha, respectively.

The fields were plowed in autumn and mineral fertilizers $N_{150}P_{105}K_{75}$, $N_{200}P_{140}K_{100}$ and $N_{250}P_{175}K_{125}$ kg / ha were used. 9.2 and 8.7 t / ha, respectively.

13.9 t / ha of soil particles were washed during the season when 4 million seeds were sown per hectare between rows of winter wheat and cotton, and 1.7-2.6 t / ha of soil particles were washed during the season when sowing costs were increased by 6 million seeds per hectare. in the field it decreased by 1.5-2.0 t / ha. Hence, it was found that the physical properties of the soil improve and the leaching of soil particles decreases with the increase of mineral fertilizers and sowing norms of winter wheat, depending on the methods of tillage before sowing the seeds of winter wheat.

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