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EFFECTS OF IRRIGATION PROCEDURES ON AGROPHYSICAL PROPERTIES OF SOIL

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ABSTRACT
Irrigation accuracy causes to soil moisture, before irrigation, is 65-75-60% based on "field moisture capacity", increase of bulk density and porosity. However, in exactly these variants, because of high position of crop's growth, development and fertileness, it is suitable for autumnal wheat in being learnt soil-climate condition.

KEYWORDS: Sowing dates, mineral fertilizer application rates, nutrition, irrigation scheduling Fc, yield, profitability, growth stages, economic effectiveness, sierozem soils with transition to meadow soil type, winter wheat.

RELEVANCE OF THE TOPIC
In our country, cereals, including winter wheat, are grown mainly through artificial irrigation. Proper irrigation management has a certain effect on the agrophysical properties of the soil, along with a rich harvest from crops. Soil volume mass, porosity and field moisture capacity are important agrophysical properties of this soil and are factors that significantly affect plant growth, development and productivity. In soils with low mass, the plant grows well and allows to grow a rich harvest.

LEVEL OF STUDY OF THE TOPIC
In order to produce high and stable quality crops of winter wheat in different soil and climatic conditions, their sowing times, irrigation regimes, norms and terms of application of mineral fertilizers are determined by soil mass and porosity, water reserves and nutrients in soil layers, thermal, air and microbiological processes. A number of scientists, including B. Khalikov, S. Abdurahmanov, A. Iminov, H. Atabaeva, B. Azizov and others have conducted research and made recommendations on the study of the effects of
The study of the impact of winter wheat sowing times, mineral fertilizer rates and irrigation regimes on the agrophysical properties of the soil in the conditions of grazing gray soils of Jizzakh region will further complement the work studied in previous years.

THE PURPOSE OF THE STUDY
To determine the optimal sowing period and irrigation regime of winter wheat in the conditions of grazing gray soils of Jizzakh region, as well as the effectiveness of the annual application of nitrogen fertilizer to different standards during the development of winter wheat.

RESEARCH METHODS
Terms of sowing of winter wheat (01.10 and 15.10), norms of mineral fertilizers (N180 / P120 / K90 kg / ha) and irrigation regimes (60-70-60%, 65-75-60%) in the conditions of grazing gray soils of Jizzakh region) experiments on the impact on the agrophysical properties of soil in 2009-2011.
The total area of the experiment was 0.75 ha. The experiment was conducted in a field setting and consisted of 20 variants and 3 repetitions. The experimental field soil is light sand in terms of mechanical composition, groundwater varies at a depth of 1.8-2.2 m during the season.
The research was conducted annually in a new field, and on the basis of the guidelines "Methods of conducting field experiments" (Tashkent, 2007) and "Methods of agrochemical, agrophysical and microbiological research in polyvinyl cotton fields" (Tashkent, 1963) in each field at the beginning of the

season and at the end of the season, the volume volume of the soil against the background of irrigation regimes was determined using cylinders.

Results of the study: Surveys were conducted in a new field each year, and soil volume mass and porosity were determined using cylinders based on samples taken from five points in the field at a depth of 50 cm every 10 cm of soil using the envelope method.

Soil volume mass is 1.25 in the 0-30 cm driving layer of soil, respectively, at the beginning of the season; 1.23 g / cm3, 1.29 in the subsoil i.e. 30-50 cm soil layer; 1.26 g / cm3. By the end of the season, when the survey results were analyzed, it was found that there were differences in irrigation regimes at the beginning of both seasons for both designated planting periods, i.e., an increase in soil volume mass.

It is known that irrigation and rainwater seep from the top to the bottom, that is, due to their own weight, penetrate into the lower layers of the soil. During the absorption process, gases, anions, cations, micro and macro elements, organic compounds, acids and other water-soluble elements in the soil dissolve to form a soil solution. This improves the growth and development of plants, as well as the activity of beneficial microorganisms. To do this, it is important that the timing and norms of irrigation were timely and acceptable. This suggests that excessive watering times and norms may be another reason for the increase in soil density if soil solution leaks out into the effluent or is added to groundwater.

Also, a certain part of the soil layers consists of pores, which in the process of moving water downwards washes away fine dust, sand and other particles of soil from the upper layers of the soil in addition to the above and fills a certain part of the pores. As a result, some of the gases in the pores are released into the air. It can be assumed that the volume of the soil decreases, and therefore the volume increases with the mass, the porosity decreases.

Therefore, it is important to pay special attention to soil moisture, timing and rate of irrigation when irrigating crops.

According to the results of the study, in the 2009-2010 season, soil moisture was irrigated once in the order of 60-70-60% relative to ChDNS, 0-1-0 system, and soil moisture was twice irrigated in the order of 65-75-60% relative to ChDNS 0-1. -1 irrigated in the system. The fact that the amount of precipitation in this season was 545.7 mm, respectively, can be explained by the fact that the soil provided sufficient moisture to the crops and caused a lack of irrigation.

In the 2010-2011 season, in both periods, soil moisture was twice as high in the 0-1-1 system in the irrigation regime of 60-70-60% relative to the ChDNS, and soil moisture was tripled in the irrigation regime in the order of 65-75-60% relative to the ChDNS, 0-2- 1 irrigated in the system.

When analyzing the results on sowing periods, the vegetation of crops begins after the application of seed water, which also leads to the onset of physicochemical processes in the soil.

In the variants planted in 01-10.10 at the end of the season, when the irrigation volume is 60-70-60% compared to ChDNS, the volume mass is 1.31-1.29 g / cm3 in 0-30 cm layer of soil, 1.36-1.33 g / cm3 in 30-50 layer. cm3. During this period, when the irrigation regime was 65-75-60% relative to the ChDNS, it was found that the soil volume was 1.33-1.31 g / cm3 in the 0-30 cm layer and 1.37-1.36 g / cm3 in the 30-50 layer.

This is 0.02-0.02 g / cm3 in the drive layer, 0.01-0.03 g / cm3 in the subsoil layer, 0.08 g / cm3 in the drive layer of the soil relative to the beginning of the season, respectively, in the high irrigation regime relative to 60-70-60% soil moisture. was observed to be higher than 0.08–0.10 g / cm3 in the stratum. The results obtained are tabulated in Table 1.

The same pattern was found in the variants planted in 15.10. According to him, when the irrigation regime is 60-70-60% of the ChDNS, the soil mass is 0.05-0.07 g / cm3 in the 0-30 cm layer, 0.06-0.08 g / cm3 in the 30-50 layer, and the irrigation regime is 65-75 in relation to the ChDNS. At -60%, the volume mass was observed to be 0.07-0.08 g / cm3 in the 0-30 cm layer and 0.07-0.09 g / cm3 in the 30-50 layer. The difference in soil volume mass over planting periods can be attributed to air and soil temperature in addition to soil moisture.

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Table 1. Volumetric mass (g / cm3) and porosity (%) of experimental field soil

Var. №.	irrigation procedures,%	soil layers, cm	Volume mass, g / cm3		Porosity,%	
			2010	2011	2010	2011
At the beginning of the season						
On average five points		0-30	1,25	1,23	51,92	52,69
		30-50	1,29	1,26	50,38	51,54
At the end of the season						
1-5	60-70-60	0-30	1,30	1,29	50,00	50,38
		30-50	1,35	1,33	48,08	48,85
6-10	65-75-60	0-30	1,32	1,31	49,23	49,62
		30-50	1,36	1,35	47,69	48,08
11-15	60-70-60	0-30	1,31	1,30	49,62	50,00
		30-50	1,36	1,34	47,69	48,46
16-20	65-75-60	0-30	1,33	1,31	48,85	49,62
		30-50	1,37	1,36	47,31	47,69

In our study, when analyzing soil porosity in the 2009-2010 season, at the beginning of the season it was 51.92% in the 0-30 cm layer of soil and 50.38% in the 30-50 cm soil layer. By the end of the season, these figures were 49.62% in the 0-30 cm layer of soil and 48.85% in 65-75-60% soil moisture when irrigated at 60-70-60% compared to ChDNS planted in 1-10.10. That is, depending on the irrigation regime, it was observed that the driving layer of the soil decreased by 2.30-3.07% compared to the beginning of the season, respectively. This situation can be explained by the fact that the number and norms of irrigation in irrigation regimes also led to an increase in soil porosity. This regularity was also confirmed during the second sowing period. The data are presented in Table 1.

CONCLUSION:

Hence, irrigation regimes, i.e., 65-75-60% of soil moisture before irrigation relative to ChDNS, lead to an increase in soil volume mass and a decrease in porosity. However, it can be concluded that it is optimal for winter wheat in the studied soil-climatic conditions due to the high growth, development and yield of the plant in these variants.

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