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INCREASING THE FERTILITY AND CROP PRODUCTION OF LANDS SUBJECTED TO IRRIGATION EROSION

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Abstract. Planting of winter wheat and sow recurrent crops in the fields affected by irrigation erosion, their nutrition norms and irrigation methods were influenced by soil agrophysicist, agrochemical properties, erosion processes and crop productivity.

Key words. Irrigation erosion, agrophysicist of the soil, agrochemical properties, leaching of soil particles, cultivation (soybean, mash, lovia) crops, growth, development, productivity.

Introdaction. The existing irrigated fields of Uzbekistan have different fertility and mechanical composition, slope, and there are different types of soils. Due to the washing of soil particles as a result of irrigation of dry land, not only the soil fertility is reversed, but it also leads to a decrease in the yield of crops. Production of a measure aimed at increasing the length of soil erosion from Shuis, encouraging short-rotation of crops on lands subject to irrigation erosion, especially on hilly land without mud, averaged and washed-out parts of the rotation (1:2, 1:1) from crops, especially soil. resource-efficient agrotechnology blue development and production of winter wheat, repeated crops - soybean, mung beans, beans and siderat crops.

Research methodology. Renewal of cultivation processes on lands affected by irrigation of erosion, preservation and production of soil fertility, increase of soil fertility and growth and productivity of crops through the planting of repeated crops after winter wheat in the cultivation of high and quality crops, and the development of appropriate irrigation methods and feeding methods. research has been carried out. (Table 1). Before placing the field experiments and at the end of the period of operation, the soil was measured at 0-30 and 30-50 cm, nitrogen nitrates were measured by ionometric method, and phosphorus was determined by B.M.Based on the Field Experiment Methods (2007) manual.

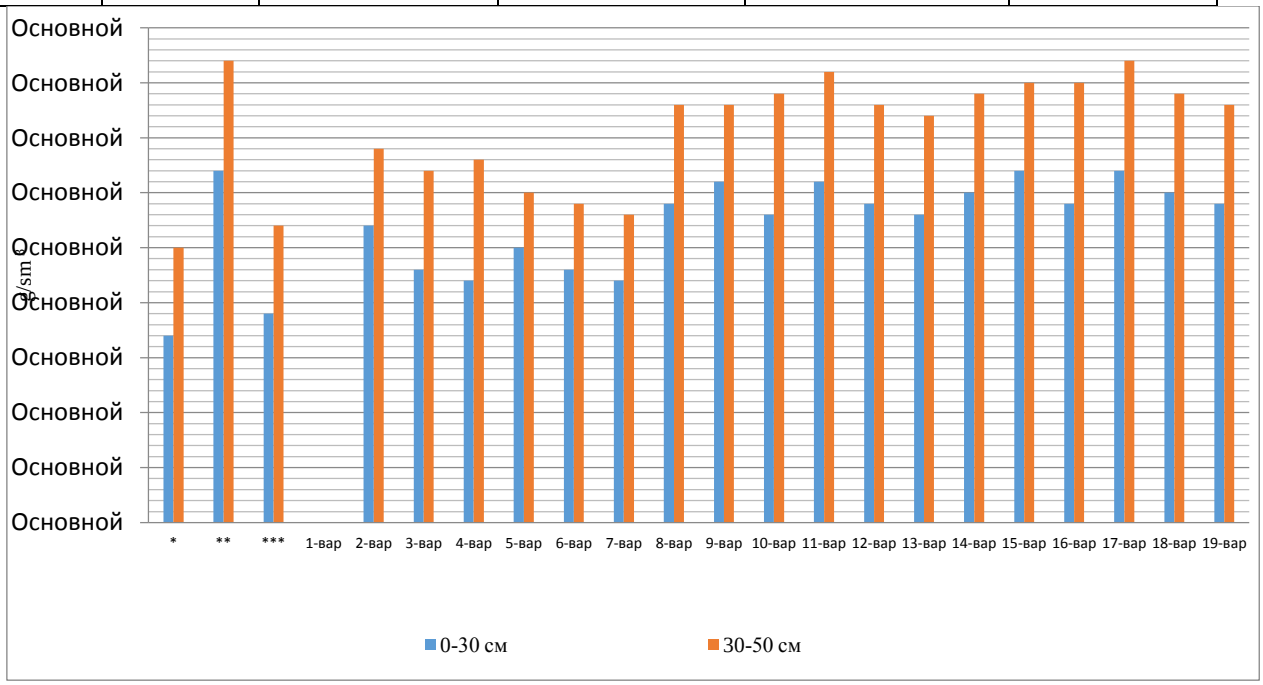
Research results. Cultivation of recurrent crops after the main crops in short crop rotation systems affects the agrophysics of the soil. Volumetric mass of the soil before planting is 1.27 g / cm 3 in the 0-30 cm layer, 1.35 g / cm 3 in the 30-50 cm layer after plowing, fertilizing, weed control, etc.) as a result of 0- 30 cm 0.15 g/cm 3, 30-50 cm 0.17 g/cm 3 was determined by

organic. Therefore, in the options where the experimental area was plowed in autumn and then repeated crops were planted, the weight of the soil was 1.29-1.37 g/cm 3 in the upper layers. First of all, it should be said that, regardless of the types of repeated crops and the method of irrigation, the density of the soil increases from the beginning (summer) to the end (autumn) in all options. After repeated cropping, the data obtained for the options differed slightly from each other.In repeated crops, the density of the soil in the 0-30 and 30-50 cm layers was 1.37 and 1.44 g/cm^3 towards the end of the 2nd option, in which no cultural fertilizers were used, and it was the most dense in the 7th option. Compared to the alternatives, the increase was 1.42 g/cm^3 and 1.52 g/cm^3 when the 17th option, i.e. Tacrorium, was planted (Picture. 1).By the end of the period of operation, the plowed and non-recurrent crop field is naturally compacted, and the agrotechnician, who has been in the care of repeated crops, has determined the density of the soil under his control.

Table 1

Field experiment system

№	In repeated crops				
	Crop type			Fertilizer rate, kg/ha	Irrigation method
1	No repeat crop was planted				
2	Soybean	Mashbean	Loviya bean	-	simple method
3	Soybean	Mashbean	Loviya bean	$N_{50} P_{75} K_{50}$	simple method
4	Soybean	Mashbean	Loviya bean	$N_{75} P_{110} K_{75}$	simple method
5	Soybean	Mashbean	Loviya bean	-	Zig-zag
6	Soybean	Mashbean	Loviya bean	$N_{50} P_{75} K_{50}$	Zig-zag
7	Soybean	Mashbean	Loviya bean	$N_{75} P_{110} K_{75}$	Zig-zag



Picture 1. The effect of methods of irrigation of repeated crops and the parameters of soil on the volumetric mass of the soil, g/cm^3 Note: * before planting winter wheat,

**** after harvesting,**
***** after plowing, before planting repeat crops.**

The water permeability of the soil is understood as the ability to transfer water from the top to the lower layers. The water permeability of the soil is considered one of the important agrophysicist properties, and it plays a key role in the formation of higher microorganisms in the water reserve in the soil. Absorption of water applied to the soil during the growing period of crops depends on the water permeability of the soil, and the duration of irrigation of new crops was determined based on this property of the soil.

Improving the productivity of lands affected by irrigation erosion in short-rotation cropping systems has revealed the effect of planting recurrent crops after winter wheat.

It was found that irrigation methods, irrigation methods and crop types had a greater effect on the water permeability of winter wheat when repeated crops were planted. By the end of the experiment, the water permeability of the soil was 1173.8 m^3 / ha in 6 hours in the case of soybeans planted, no fertilizer was applied, and irrigated from a simple irrigation system, nitrogen-50 kg per hectare, phosphorus -75 kg, phosphorus-75 kg, phosphorus-75 kg, potassium-1,5 kg, potassium. m^3 / ha and when high fertilizer standards, nitrogen-75 kg, phosphorus-110 kg and potassium-75 kg were used, it was 1309.5 m^3 / ha. -120, 1215.1 m^3 /ha) was observed in the options performed by the zig-zag extraction method, where nitrogen-75 kg, phosphorus-110 kg and potassium-75 kg were applied (Picture 2). In the fall, the water permeability of the soil was observed to have a positive control on the production of mosh valovia during the establishment of a repeated soybean crop. It was determined that 75 kg of nitrogen, 110 kg of phosphorus and 75 kg of potassium per hectare were applied by irrigation in a zig-zag manner.

It was found out from the laboratory analysis of the soil samples in the options where the repeated crop after winter wheat is grown, that the total amount of nitrogen in the 0-30 cm is 0.038%, 30-50 cm is 0.031%, and 0-50 cm is 0.03%. ha, the amount of phosphorus in these layers is 0.108-0.091 and 0.102%, and the amount of humus is proportionally 0.595-0.542 and 0.568%.

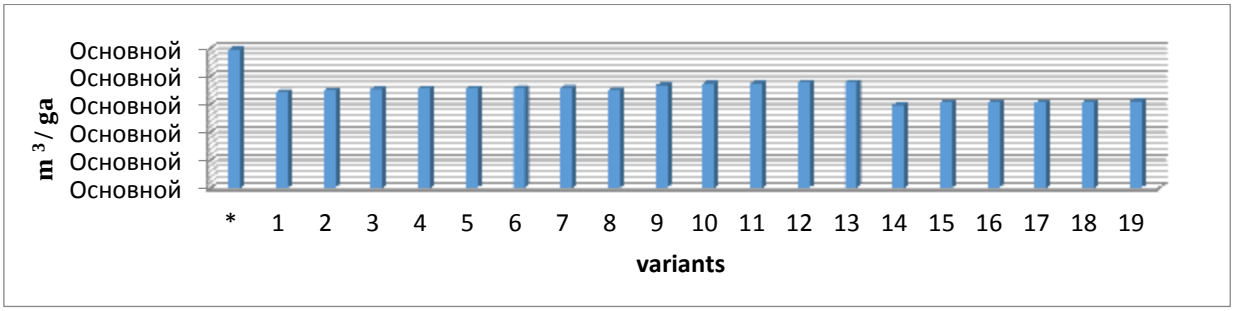


Figure 2. Effect of repeated cropping on soil water permeability, m^3 /ha.

According to the chemical analysis of soil samples taken from the field where mosh is being cared for, nitrate nitrogen is 6.87 mg/kg at 0-30 cm, 6.42 mg/kg at 30-50 cm, phosphorus is 24.65 mg/kgpot and 12.25 and 12.02 and 12.0 respectively. m. If it is 140.0 mg/kg, by the end of the period of application, this indicator will be the same as without fertilizer.

Option 8, according to layers, the corresponding nitrate nitrogen was 5.98-4.6 mg/kg and mobile phosphorus was 27.8-11.5 mg/kg. It was noted that the amount of light load in the sub-plough (30-50 cm) layer of the soil is significantly less than the plow (0-30 cm) layer.

9-variant nitrate-nitrogen soil 0-30 cm or catlamide 6.26 mg/kg, 30-60 cm/kg, with 50 kg of nitrogen, 75 kg of phosphorus and 50 kg of potassium applied per hectare, which was

maintained and irrigated in a zig-zag manner. 0-50 cm and 6.23 mg/kg, phosphorus 22.0 in these layers; 11.0 and 16.5 mg/kg, and potassium 210; It was found that it was equal to 130 and 170 mg/kg.

715.6-920.0 m^3 of water was consumed per hectare in each irrigation of the field of the experiment, depending on the type of crops and irrigation methods, 1568.2-2340 m^3 of water was consumed per hectare.

In the variants of the experiment, which were irrigated by the simple method, the seasonal irrigation norm was 1357.9-2088.9 m^3/ ha, depending on the types of crops, while in the variants irrigated by the zig-zag method, this 1272.4-2057.3 m^3/ha was formed.

Depending on irrigation methods and types of crops, when determining the amount of soil particles (turbidity) that is washed away together with wastewater, in the case of options irrigated in a simple way, the quantity of soil particles, that is, how much wastewater is washed away with soil water. It was found that the amount of soil particles washed away by wastewater was 8.3 tons per hectare per season in the option of watering soybeans with regular irrigation, while in the option of watering with the zig-zag method, this ratio was the same, i.e. 6.2 t/ha. It was found that the option with the least amount of soil particle washing with tail water was when the boom was irrigated by the zig-zag method (4.9 t/ha) (Picture 3).

When the data were compared with each other, it was found that repeated crop irrigation with zig-zag method has a positive effect on seasonal water consumption and soil particle washing. So, in this method, when crops are irrigated, it is possible to maintain soil fertility and save irrigation water.

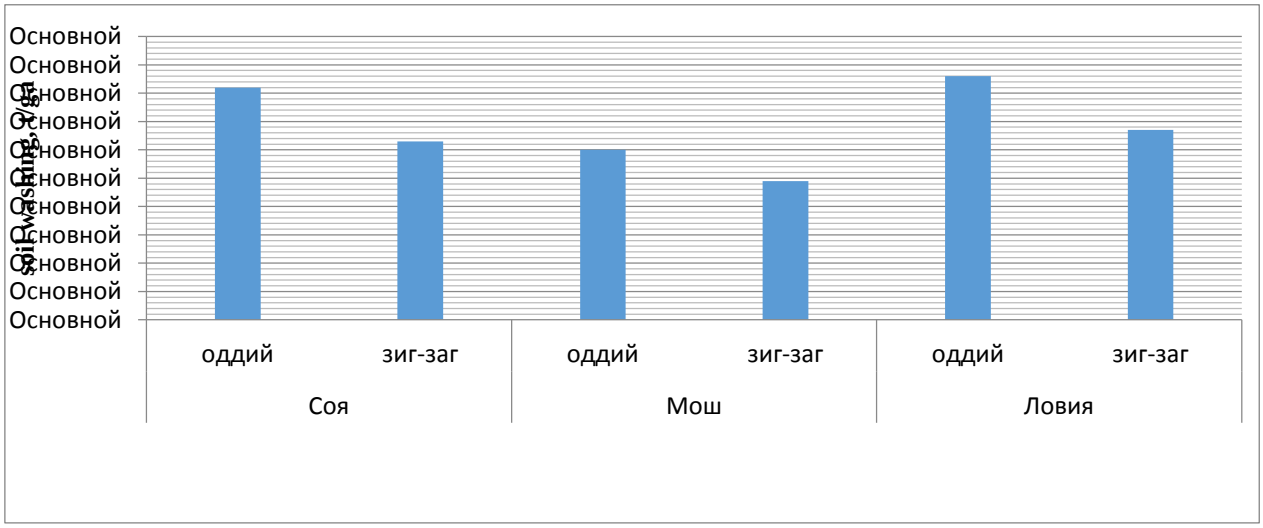


Figure 3. Washing of soil particles as a result of planting repeated crops, t/ha.

The seeds of repeated crops were sown in the experimental field, and after 10% germination, their germination was monitored every three days until 90-95% germination. It was observed that the germination of the seeds differed partially from each other according to the types of crops, and it was found that the lowest germination was in mash seeds. First Julian Jul of Tagrib

29 During our observations, Soybean Germination is 9.1-9.4%, and if it is UNIB, the germination of Lovia seeds is close, I am 9.5-9.8%, it is not organized. Mosh seeds have slightly

higher fertility, this indicator is equal to 10.2-10.7%. It should be noted that the slow germination of seeds depends on the thickness and hardness of the seed coat.

In the year of the experiment, in observations on the 30th day of the month of June, the germination of soybean seeds was 8.5-9.1%, and if they germinated, the germination of bean seeds was 8.2-9.3%. Germination is 9.5-10.6%, and in the year of the experiment, the indicators in the field of germination were 9.3-9.6%, and in the mash crop, it was equal to 10.4-10.9%.

In all variants of the experiment, after reaching the thickness of the entire plant by crop types, unification works were carried out on the 7th-10th of August. On the 15th, the planning of the development of higher plants began. In the first year of the experiment, soybeans were planted and watered in the usual way, mineral fertilizers were not used, option 2, if the plant height was 3.0 cm, the number of true leaves was 1.9 pieces, this method applied 50 kg of nitrogen per hectare, 75 kg of nitrogen per hectare. phosphorus and 50 kg potential plant and 50 kg. It was 3.4 cm long and 1.9 cm tall. In the 4th option, where 75 kg of nitrogen, 110 kg of phosphorus and 75 kg of potassium per new hectare of fertilizers were applied, the ratio of these fertilizers was 3.6 cm and 2.0 grains. In the following years of the experiment, the proportional development of these indicators is 3.4-2.0; 3.3-1.9; 3.7-2.1 and 4.1-2.3; 4.0-2.2; It was 4.4-2.4 pcs. In our phenological observations conducted at 3:00 p.m. in October, the average plant size in the first year of the experiment was 41.7 cm, hum sony 1.6 pieces, and legumes 20.1 pieces, and 50 kg and 50 kg and 50 kg. KG of potash, ordinary Usuliil Watered 3-Varipsatchich 56.4 cm, 26.0 Grains, 50 kg phosphorus and 75 kg disasters, 58.2 cm, Sony 28.2 Grains and beans Sony 27.3 grains. It was observed that these indicators were even higher when the irrigation of this fund was carried out in the zig-zag method. In this case, the average stem temperature of the 5-variant plant without Yutsiz is 42.2 cm, hum of sony is 1.8 units and beans are 21.5 units of bwlsa, 50 kg of nitrogen, 75 kg of phosphorus and 50 kg of potassium are 68 kg per hectare. is equal to 2.1 and 26.9, and 75 kg of nitrogen, 110 kg of phosphorus and 75 kg of potassium were used in the 7th option, which was 59.1 cm, 2.3 and 28.7 grains respectively. If this situation was preserved in the following years of the experiment, in the 2nd option, these proportions were 47.2 cm, 1.8-21.7 units, and in the same version, these indicators were 50.8 cm, 3.4-24.4 units. , these conditions were also reflected in the options where mosh volovia was planted (Table 3.4.3.2).

As we mentioned above, the rules of cultivation and irrigation methods have a direct effect on the growth and development of plants. It was found that if the soybean crops were watered three times during the period of operation, the water demand of the mosh orchard was somewhat less. It was found that there is a significant difference between the irrigation methods in the growth and yield of plants. In practice, this process is another design along with classifying the plant.

At the same time, by the end of the operation period, in the first year of the experiment, 117.8-123.4 seedlings per meter of soybeans, 227.6-236.4 seedlings per meter of mush, and 93.5-99.8 seedlings per meter of beans are clearly visible - 123.8 seedlings per meter. If it is clear, it is 123.4 years. ; 151.0-154.0 and 119.0-122.0 grains, and in the year of the experiment, the cultivation according to the types of crops is 135.8-139.2; 245.6-254.4 and 200.0-202.5 bare equal bowled. The most efficient evaluation factor of the applied agro-production is the yield of crops. In conventionally irrigated non-fertilizer options, 9.2 centners/ha from soybeans, 6.3 centners/ha from mush and 7.7 centners/ha of beans were obtained, 50 kg of nitrogen, 75 kg of phosphorus and 50 kg of potash is planted. 13.2; 12.5 and 14.3 quintals/ha were harvested.

Conclusions. When winter wheat was planted with sun tacrorium soybeans and moss, the bulk density of the soil improved to 1.32 and 1.38 g/cm SW permeability in the 0-30 and 30-50 cm layers. Due to the rapid decrease of water when repeated crops are irrigated in a zig-zag manner, water transport increased by 2.5%, and the leaching of soil particles decreased by 0.8-1.9 t/ha.

If repeated crops were irrigated in a simple way and the grain yield was 9.7 c/ha from soybeans, 8.3 c/ha from alfalfa and 10.7 c/ha from soybeans without the use of fertilizers, N50 P75 K50 The grain yield increased by 0.7-8 hectares per kg/ha, and by 0.2-2.5 quintals/ha according to irrigation, and 28.8 percent yield was achieved in soybeans by 33.9 percent and in mash by 21.4 percent.

N 50 P 75 K 50 kg / ha to maintain and control the fertility of lands subjected to erosion of irrigation, to eliminate soil erosion and erosion, to grow a high yield from winter wheat and repeated soybean and mung crops.

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