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REPRODUCTIVE CROPS IN THE CONDITIONS OF TYPICAL GRAYS THROUGH IRRIGARTSIA EROSION HAVE BEEN DEPENDING ON ORGANO-COMPOSTS APPLIED TO SHADOWS AND POTATOES

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ABSTARCT:

In this article given information about the sat particles (accumulated) depending on the organic-mineral composts applied to soybeans and potatoes from repeated crops on the development of their growth and the impact on the agrochemical properties of the soil in the case of typical gray soils affected by irrigation erosion, after autumn wheat soils are moderately moistened.

KEYWORDS: Typical gray soil, irrigation, erosion, replanting, soybeans, potatoes, organic-mineral composts, agrochemical properties, nitrate nitrogen, mobile nitrogen, mobile phosphorus, exchangeable pottasium.

INTRODUCTION:

Worldwide, 1,964.4 million hectares of land are degraded, of which 55.7% is caused by water erosion. Most of the degraded areas are in Asia, Africa and South America. As a result of degradation, 6-7 million hectares of land are lost to agricultural use every year. The growing degradation of land and water resources poses a negative threat to the world's major food stocks. It is said that this situation is likely to limit the food supply of the world's population, which is expected to reach 9 billion people by 2050[1].

Factors causing erosion in the world, classification and mapping of erosion, methods and types of efficient use of irrigation water in these areas, reduction of soil leaching, conservation and increase of soil fertility, development of high-quality agricultural crops, development and introduction of agro-technologies However, the effective use of land, water, fertilizers and other resources, the development of resource-efficient agro-technologies, the provision of the population with food, industry with raw materials, and livestock with nutritious food remain urgent issues.

722,000 hectares of land in the country are affected by irrigation erosion, 1,812,000 hectares by wind erosion (in arable lands), and 1,929,000 hectares by sudden water and wind erosion. Therefore, prevention of erosion processes, maintenance and increase of soil fertility, obtaining high and quality crops from crops are the most pressing issues.

The most important role in the fight against soil erosion is played by crop rotation. In crop rotation, it is advisable to use one-year and perennial grasses, as well as intercropped crops.

Therefore, in order to maintain and increase soil fertility, in the conditions of typical gray soils affected by irrigation erosion, the application of mineral fertilizers and organo-mineral composts in different doses to winter wheat-free lands, increasing their impact on crop yields and soil fertility in 2017-2019. Field experiments were conducted over time and time (in a new field each year) under typical gray soils (slope level 2.00) (Table 1). The experiment consisted of 16 variants, of which variants 1-8 were placed in the middle of the washed soil, variants 9-16 were placed in the lower part, where the soil particles were

washed from the slope. Field experiments were carried out in the methods described in the sources "Methods of field experiments with cottonseed" [1], "Methods of agrochemical, agrophysical and microbiological research in polyvnykhrayons" [2]. The experimental system is shown in Table 1.

As a result of phenological observations on the growth and development of repeated crop shade after winter wheat, there was no significant difference between the variants as of July 1, 2017 in the lower parts of the soil where moderately washed and sloped particles settled from the slope. As of August 1, control of the average washed part of the soil in the 1st variant of soybean plant height 26.7 cm, yield 0.9, number of flowers 5.8, pods

Table 1. Experimental system for studying the impact of compost application on soil fertility and repeat crop yields at different rates (2017-2019)

Variant number		Types of secondary crops	Organo-mineral compost rate used in secondary crops, t / ha	Quantities used in secondary crops (NPC), kg / ha
1	9	Soy	No compost was placed under the plow after the wheat	N-60, P-90, C-60
2	10		After the wheat, 10 tons of compost per hectare was applied under the plow	
3	11		After the wheat, 15 tons of compost per hectare was applied under the plow	
4	12		After the wheat, 20 tons of compost per hectare was applied under the plow	
5	13	Potato	No compost was placed under the plow after the wheat	N-180,P-150, C-100
6	14		After the wheat, 10 tons of compost per hectare was applied under the plow	
7	15		After the wheat, 15 tons of compost per hectare was applied under the plow	
8	16		After the wheat, 20 tons of compost per hectare was applied under the plow	

Note: 1-8 options are placed on the average washed part of the soil, 9-16 options are placed on the lower (accumulated) part where the soil particles washed from the slope sit.

Number of beans are 4.5, 10 against the background of mineral fertilizers; When 15 and 20 tons of compost are applied, the plant height is 27.5; 29.6 and 31.2 cm, fruiting branches 1.0; 1.1 and 1.1 pieces, flowers 6.9; 7.4 and 7.6 and the number of pods 5.4; 5.9 and 6.1 units, respectively, 0.8 compared to the control variant; 2.9 and 4.5 cm, 0.1; 0.2 and 0.2 pieces, 1.1; 1.6 and 1.8 pieces, 0.9; 1,4 and was found to be 1.6 higher.

In the part of the slope where the washed particles passed (accumulated), only mineral fertilizers N-60, P-90, K-60 kg / ha were applied to the shade. In option 9, the plant height was 29.1 cm as of August 1, the yield was 1.0; flowers 6.3; legumes amounted to 5.3 grains, 10 to the background of mineral fertilizers; When applied at 15 and 20 t / ha, plant height was 33.8, respectively; 34.4 and 35.7 cm, fruiting branches 1.2; 1.2 and 1.3, number of flowers 7.5; 7.6 and 7.8, and the number of pods 6.4; 6.5 and 6.7 units, respectively, compared to the control 4.7; 5.3 and 6.6 cm, 0.2; 0.2 and 0.3 pieces, 1.2; 1.3; 1.5 and 1.1; 1,2; It was found to be more than 1.4 units.

As of August 1, there was no significant difference between the options for the growth and development of replanted potatoes in the conditions of 2017, but as of September 1, the effectiveness of the applied fertilizers was clearly demonstrated. At the same time in the control of the average washed part of the soil

(option 5) on the background of mineral fertilizers N-180, P-150, C-100 kg / ha plant height 54.9 cm, number of stems 3.5, number of side branches 9.5 number of leaves 105 grains, 72.4 cm, 4.4, respectively, when 15 tons of compost is applied to the background of this mineral fertilizer; 12.3 and 139, 17.5 cm, 0.9, respectively, compared to the control variant; 2.8 and 34 were higher, respectively. The variants, which used 20 tons of compost per hectare, also differed significantly from the control variant.

The same laws were repeated in the case of September 1 in the passages (accumulated) parts of the washed particles from the slope.

By the end of the period of repeated crop shade application, the plant height 54.4 cm, yield branches 1.6 pieces, number of pods 27.8 pieces, season in layers 0-30 and 30-50 cm of soil under the control of the average washed part of the soil (option 1) nitrate nitrogen, mobile phosphorus, and exchangeable potassium per capita were 0.3 and 0.1 mg / kg, respectively; 0.3 and 0.2 mg / kg, 2 and 0 mg / kg were found to be high.

This condition can be attributed to the influence of the root and root remnants of the soybean plant and the mineral fertilizers applied.

Relatively high rates were observed when compost was applied at a rate of 20 t / ha against the background of mineral fertilizers (option 4), and by the end of the application, the height of the soybean plant was 63.1 cm, yielding branches was 2.0, the number of pods was 32.3. Nitrate nitrogen was 20.7 mg / kg, mobile phosphorus was 27.5 mg / kg, and exchangeable potassium was 230 mg / kg, or the height of the plant was 8.7 cm in exchange for organo-mineral compost applied, and the number of horns and pods was 0.4, respectively. and 4.5 pieces, the amount of nitrate nitrogen, mobile phosphorus and exchangeable potassium in the 0-30 cm layer of soil was 1.6, respectively; 2.1 and 28 mg / kg were found to be high.

Against the background of mineral fertilizers, it was observed that the scientific data obtained in Option 3, which used 15 tons of organo-mineral composts per hectare, were closer to Option 4.

At the end of the control period, the height of the plant was 57.2 cm, the number of branches was 1.7, the number of pods was 30.4, and nitrate nitrogen was 29.2 mg in the driving layer of the soil. / kg, mobile phosphorus 42.3 and exchangeable potassium 248 mg / kg, the control of the average washed part of the soil was 2.8 cm plant height, yield horn 0.1 and the number of pods 2.6 pieces, respectively, compared to option 1 In the 0-30 cm layer, nitrate nitrogen is 10.1 mg / kg, mobile phosphorus is 16.9 and exchangeable potassium is 46 mg / kg, which is due to the fact that over the years the crop is washed away by fertile parts of the soil under the influence of irrigation water indicates

In the permeable (accumulated) part of the washed particles from the slope, 10 tons of compost was obtained on the background of relatively acceptable mineral fertilizers, including plant height 63.4 cm, yield branches 2.2 pieces, number of pods 34.2 pieces, nitrate nitrogen 31.0 mg in the topsoil. / Kg, mobile phosphorus 43.6 and exchangeable potassium 271 mg / kg or 6.2 cm plant height compared to control, yield branches 0.5 and number of pods 5.4, nitrate nitrogen in 0-30 cm layer of soil 1.8 mg / kg, mobile phosphorus 1.3, and exchangeable potassium were found to be 23 mg / kg higher.

Against the background of mineral fertilizers, relatively high results were obtained in the variants where composts of 15 and 20 t / ha were applied.

At the end of the application period of potatoes, control the average washed part of

the soil in the background of option 5 mineral fertilizers N-180, P-150, K-100 kg / ha, plant height 58.8 cm, number of stems 3.5, number of side branches 10.8, if the number of leaves is 124 and the number of stems is 6.1, in the 0-30 cm layer of soil at the beginning of the season nitrate nitrogen is 17.8 mg / kg, mobile phosphorus is 25.3 and exchangeable potassium is 200 mg / kg. nitrogen decreased by 0.5 mg / kg, mobile phosphorus by 0.4 mg / kg, and exchangeable potassium by 9.0 mg / kg. Relatively high rates in this section were observed in the variant where 20 t / ha of compost was applied to potatoes against the background of mineral fertilizers, with plant height 79.3 cm, number of stems 4.5, number of side branches 14.6, number of leaves 162 and number of stems 6.8, Nitrate nitrogen was found to be 2.7 mg / kg, mobile phosphorus 1.8, and exchangeable potassium 29 mg / kg more than the control option in the soil driving layer.

The above laws were also observed in the lower part, where the washed particles from the slope sat. Similar data were obtained in the following year of the study.

In conclusion, the use of organo-mineral composts in the areas of typical gray soils affected by irrigation erosion can increase the amount of nitrate nitrogen, mobile phosphorus and exchangeable potassium in the soil and create optimal conditions for crop growth and development.

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