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THE EFFECT OF APPLYING VARIOUS RATES OF COMPOST ON THE AMOUNT OF HARMFUL SALTS IN MODERATELY SALINE MEADOW-TAKIR SOILS

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Annotation. *Saline soils are soils containing harmful salts that are readily soluble in water at more than 0.1% or with a dry residue in the aqueous extract of more than 0.25% (0.3%). Saline soils occupy large areas, primarily in countries with dry climates (Pakistan, India, China, USA, Central Asia, South America, Africa, Australia, and others). Based on the depth of the salt layer and the amount of salts in it, saline soils are divided into the following 5 groups: non-saline, slightly saline, moderately saline, strongly saline, and salt marshes. The soil in our experiment was moderately saline, and the composts we applied had a positive impact on reducing the amount of harmful salts. Applying compost at 13.0 t/ha once every 3 years under plowing and 2.0 t/ha of various composts during the growing season in the cultivation of fine-fiber cotton improved the soil's reclamation status and reduced chloride ions by 0.011%.*

Key words. *Salinization, agro-ore, bentonite compost, phosphorite compost, manure, compost, dry residue.*

Log in. Many Uzbek scientists have applied various rates of compost to the soil and scientifically substantiated their influence on the amount of harmful salts. Scientific research has established that an increase in the concentration of harmful salts in saline soils increases the volume of compost used, which leads to the transition of water-soluble salts from a sol state to a gel state, i.e., coagulation [1;2;3;4;5;6;7;8;9;10].

Scientists have established that the application of various agro-ores at different times and rates in the conditions of saline soils, among various reclamation measures, leads to a decrease in the amount of water-soluble salts in the plow layer of the soil and does not have a negative impact on the plant [11;12;13;14;15].

Methods: Experiments were carried out using "Methods of conducting field experiments" UzPITI (2007) [16], in agrophysical analyzes "Metody agrokhimicheskih i mikrobilovicheskih issledovaniy v polivnyx rayonakh" methodological manuals of SoyuzNIXI (1977) were used [17].

Results. In our study, the effects of different norms and durations of agro-ores and composts prepared on the basis of these as natural ameliorants were studied in the conditions of barren soils with chloride-sulphate medium salinity according to the type of salinity.

Changes in the amount of salts, dry residue and Cl ions in the soil at the beginning of the season and at the end of the period of operation were analyzed in all options at 0-50 and 50-100 cm.

In the first year of our scientific research (2020y), the first option of the research is the reduced rate of seasonal mineral fertilizers N-200, P2O5-110, K2O-70 kg/ha in the control background option, the amount of dry residue in the soil layers in the initial period is 0.557% chlorine is 0.039% and at the beginning of the season this amount is 0.556 and 0.038% did not differ from the indicators at the beginning of the period of operation (Table 1).

The optimal effects of different composts used on changes in the amount of salts in the soil layers in the care of fine fiber cotton mineral fertilizers N-200, P2O5-110, K2O-70 kg/ha background, 10 t manure and 3 t bentonite or 10 t manure and 3 t phosphorite based composts under the plow once in 3 years per hectare 13 t rate and 2 t rate of composts were observed in 2-3 variants fed with 700 kg of cotton in the 2-3 leaf period, 700 kg at budding and 600 kg at flowering. In these options, the accumulation of salts in the soil layers was 0.558-0.039 and 0.562-0.042%, while the accumulation of dry residue and chlorine ions in the 0-50 and 50-100cm layers was 0.558-0.039 and 0.562-0.042%, on 03.27.2020 decreased under the influence of different composts used It was equal to 0.419-0.027 and 0.429-0.028%.

Table 1

The effect of different compost rates and durations on changes in the amount of salts in the soil layers of the experimental field during the season, in the first year of the study, in %

№	Food standards	Initial salinity of experimental soil, 2019				At the beginning of the season, 27.03.2020				At the end of the season, 14.08.2020			
		0-50		50-100		0-50		50-100		0-50		50-100	
		dry residue	*Cl*	dry residue	*Cl*	dry residue	*Cl*	dry residue	*Cl*	dry residue	*Cl*	dry residue	*Cl*
1	Control background	0,557	0,039	0,561	0,041	0,556	0,038	0,560	0,039	0,558	0,039	0,555	0,037
2	13.0 t of compost + 2.0 t of compost per year	0,558	0,039	0,562	0,042	0,419	0,027	0,429	0,028	0,428	0,027	0,430	0,029
3	13.0 t of compost sh o and 2.0 t of compost annually	0,559	0,040	0,561	0,041	0,422	0,029	0,430	0,030	0,431	0,028	0,431	0,030

The amount of salt accumulation in the soil layers under the influence of composts used in options 2-3 of the study is 0.428-0.027% in the 0-50 cm layer and 0.430-0.029% in

the 50-100 cm layer according to the results of the analyzes obtained on 14.08.2020 it has been. Under the influence of different composts used, in the 2nd variant of the study, the amount of dry residue and chlorine ion accumulation in the soil layers was observed to decrease by 0.13% dry residue and 0.012% chlorine ion compared to the beginning of the application period.

Also, in the 50-100 cm layer of the soil, it was found that these indicators decreased by 0.13 and 0.013%. Due to the natural amelioration properties and high adsorbent properties of the various composts used, their standards caused a decrease in chloride salts from harmful salts in the soil.

In the 3rd variant of the study, when Guliob phosphorite and manure-based composts were used before plowing against the background of mineral fertilizers, the amount of harmful salts in the soil layers decreased by the end of the control period compared to the control background. In the most optimal effects of compost ameliorants applied to the control background, in the 3rd option, the dry residue in the initial period is 0.13%, the chlorine ion is 0.02%, and at the end of the operation period, this indicator is 0.11%, the dry residue is 0. It was found that it decreased by 01%.

In conclusion, it should be noted that by the end of the season, an increase in the amount of harmful salts in the soil layers was observed in all options, but in the optimal options, it was found that the increase in this amount was much less than in the control and control background options.

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