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# SALINITY REGIME OF IRRIGATED SAND DESERT SOILS

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**ANNOTATION:**

*This article provides information on the reclamation status, salt content, type and levels of salinity of irrigated sandy desert soils. According to it, the correct determination of salt washing standards based on the type and level of salinity of irrigated sandy desert soils is explained.*

## INTRODUCTION.

As we know, soil salinity levels and types are one of the most important indicators. Land reclamation has a negative effect on the yield and quality of agricultural crops grown on degraded lands.

In addition, soil salinization processes have a somewhat negative effect on its other properties, in particular, on productivity indicators, so the study of this topic is urgent.

**Materials and methods.** In order to study irrigated sandy desert soils, field expeditionary researches were conducted. In the studies, genetic horizons of the soil were described from the upper layer to the lower layer, and analyzes were taken from the soil from the bottom to the top for the purpose of analysis in the laboratory. These expeditionary studies were carried out in the conditions of irrigated sandy desert soils of Zhondar District (Middle Desert Region) of Bukhara Region. Soil salinity was determined by water absorption.

**Analysis of soil water absorption. The amount of dry residue, cation and anion content in the aqueous extract was carried out by generally accepted methods of analysis**

1. dry residue - by evaporating aqueous extract in a water bath;

2. calcium and magnesium cation - by complexometric method;

3. sodium and potassium ions - by calculation method;

4. Carbonate and bicarbonate ions or total alkalinity - 0.01 n using phenolphthalein and methyl orange indicators. by neutralization with sulfuric acid;

5. sulfate ion - gravimetric method;

6. Chloride ion - argentometric method according to Mor

**Results and their analysis.** The results of the research show that irrigated sandy desert soils are widespread in Jondar district of Bukhara region. Analysis of water absorption of irrigated sandy desert soils shows that the salt content in the surface layer of the soil is higher than in the lower layer. This process can be explained by the fact that soil samples were taken in autumn. The reason is that due to the evaporation of water contained in the soil, the amount of salt in the surface layer was relatively high, besides, it can be seen that some of the salts came as a result of wind erosion. For example, if the total amount of salts in the surface 0-25 cm layer of the soil was 0.42% dry residue, the amount of carbonates determining the total alkalinity was 0.0125%, the amount of Cl- was 0.057%, the amount of SO4-2 was 0.216%, Ca while the amount of +2 was 0.04%, and the amount of Mg+2 was 0.004%, respectively, while Na+ and The total amount of Ca+ was 0.092%. In this layer, the levels are in the medium salinity group, and the salinity type is chloride-sulfate (Table 1).

When the thickness of the layer reached 25-59 cm, these indicators slightly decreased from the upper layer, but did not affect the type and degree of salinity. It was observed that the type of salinity in this layer is chloride-sulphate, and the level is medium salinity. When the thickness of the layer reached 59-105 cm, the difference compared to the upper layers changed significantly. That is, the total amount of water-soluble salts and the dry residue indicator was 0.274%.

**Table 1**

**Water absorption analysis of irrigated grassland alluvial soils of Bukhara oasis**

| Depth (cm) | Dry residue, % | HCO3 | Cl | SO4 | Ca | Mg | Na+K | Anion-Cation | Type | Degree |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-25 | 0,421 | 0,0125 | 0,057 | 0,216 | 0,04 | 0,004 | 0,092 | 6,31 | X-C | Average |
| | | 0,21 | 1,61 | 4,50 | 2,00 | 0,33 | 3,98 | 6,31 | | |
| 25-59 | 0,368 | 0,0124 | 0,039 | 0,199 | 0,03 | 0,004 | 0,083 | 5,45 | X-C | Average |
| | | 0,20 | 1,10 | 4,14 | 1,50 | 0,33 | 3,62 | 5,45 | | |
| 59-105 | 0,274 | 0,0124 | 0,032 | 0,143 | 0,03 | 0,003 | 0,054 | 4,08 | X-C | Weak |
| | | 0,20 | 0,90 | 2,98 | 1,50 | 0,25 | 2,34 | 4,08 | | |
| 105-167 | 0,217 | 0,0122 | 0,019 | 0,118 | 0,02 | 0,003 | 0,045 | 3,19 | X-C | Weak |
| | | 0,20 | 0,54 | 2,46 | 1,00 | 0,25 | 1,95 | 3,19 | | |

It repeated the values of the upper layer without changing the difference in the total alkalinity indicator. In this layer, the main difference was noticeable in the total amount of Cl, SO4, Na and Ka. Although the type of salinity remained unchanged, the degree changed from moderately saline to weakly saline (Table 1). The indicators of the last layer (105-167 cm) studied in the soil section did not significantly differ from the indicators of the 59-105 cm layer.

**Conclusions.** Irrigated sandy desert soils, which are considered one of the automorphic soils of the desert zone, are widespread in Jondar district of Bukhara region. Saline soils contain a large amount of salts in the aquifer, among which the relatively high percentage of toxic salts causes a number of inconveniences.

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