

МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА

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CAUSES OF THE APPEARANCE OF SALINE SOILS IN UZBEKISTAN AND MEASURES TO INCREASE PRODUCTIVITY

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Abstract: In this article, various forms of soil salinization, the causes of the emergence of saline soils, measures to reduce the salt content of the soil and increase the productivity of saline soils, to reduce the amount of harmful salts to an acceptable level, are studied.

Key words: Classification, sulfate salinity, chlorine salinity, total salinity, spotty salinity, occasional salinity, re-salinization, primary salinity.

ПРИЧИНЫ ПОЯВЛЕНИЯ ЗАСОЛЕННЫХ ПОЧВ В УЗБЕКИСТАНЕ И МЕРЫ ПО ПОВЫШЕНИЮ ПРОДУКТИВНОСТИ

Аннотация: В данной статье рассмотрены различные формы засоления почв, причины возникновения засоленных почв, меры по снижению засоленности почвы и повышению продуктивности засоленных почв, снижению количества вредных солей до допустимого уровня, изучаются.

Ключевые слова: Классификация, сульфатная соленость, хлорная соленость, общая соленость, пятнистая соленость, эпизодическая соленость, пересоление, первичное соленость.

O'ZBEKISTONDA SHORLANGAN TUVROQLARNING PAYIYATISH SABABLARI VA HOSULILIKNI OSHIRISH CHORALARI.

Annotatsiya: Ushbu maqolada tuproq sho'rlanishining turli shakllari, sho'rlangan tuproqlarning paydo bo'lish sabablari, tuproq tarkibidagi tuz miqdorini kamaytirish va sho'rlangan tuproqlarning unumdorligini oshirish, zararli tuzlar miqdorini maqbul darajaga tushirish choralari, o'rganiladi.

Tayanch iboralar: Tasnifi, sulfatli sho'rlanish, xlorli sho'rlanish, umumiy sho'rlanish, dog'li sho'rlanish, vaqti-vaqti bilan sho'rlanish, qayta sho'rlanish, birlamchi sho'rlanish.

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Saline soils are soils with more than 0.25-0.30% salts. Saline soils are mainly distributed in the regions of deserts and deserts, in alluvial plains located downstream of rivers. Saline soils distributed in the Aral Sea basin are mainly formed on the basis of salts formed as a result of the reaction of Cl, SO₄, CO₃, HCO₃ anions and Ca, Mg, Na cations in equivalent amounts. They include:

CaCl ₂	MgCl ₂	NaCl
CaSO ₄	MgSO ₄	Na ₂ SO ₄
CaCO ₃	MgCO ₃	Na ₂ CO ₃
Ca(HCO ₃) ₂	Mg(HCO ₃) ₂	NaHCO ₃

The harmful effect of these salts on plants depends on their degree of solubility in water. With this in mind, the most harmful salts include NaCl (table salt), CaCl₂ (calcium chloride) and MgCl₂ (magnesium chloride). Less harmful salts include MgSO₄ (table salt), belongs to CaSO₄ 2H₂O (gypsum). Salts in the soil affect the development of plants. Salts in the soil increase the concentration of the soil solution. As a result, the macro and micronutrients necessary for the plant contained in the solution cannot pass through the roots to the plant body, its development slows down, productivity decreases. Water-soluble salts, some anions (C,OH,) involved in their formation are very mobile and toxic, and when they increase in solution, they change significantly, poison and burn the root bark. Some salts that are poorly soluble in water (gypsum or its mixture with carbonate salts) create a high density in the soil layer. As a result, plant roots do not develop well, biological and physiological processes slow down, and productivity decreases.

Soil salinization has two forms: primary (initial) and re-salination.

Primary salinization - in natural conditions, salt is formed or collected in the soil and mineral deposits as a result of general evaporation, wind, biological processes or volcanic eruptions.

Re-salinization occurs due to changes in the water regime of the soil as a result of artificial irrigation. Salinity may occasionally be in one or another place, spotty or total.

Periodic salinization usually occurs during the growth and development of plants. As a result of the amount of water used for total evaporation being more than the water used for irrigation of crops, groundwater and salts in the lower layer of the soil rise to the upper layer through capillaries.

Patchy salinity is formed in high (micro-high) areas of the field.

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Total salting means that all the oil of the field is salted. Usually, this situation is stable when saline groundwater is close to the soil level. Depending on the content of salts in the soil, the types of salinity can be different. The type of salinity is usually distinguished depending on the ratio of chlorine ion to sulfate ion, that is, Cl/SO_4 -.

If this ratio is:

If it is greater than 2 - chlorine salinity;

if 1-2 - sulfate-chlorine salinity;

if it is 0.2-1 - chlorine sulfate salinity;

If it is less than 0.2, it is called sulfate salinity;

Determining the rate and duration of measures to reduce salt content in the soil is based on the level of soil salinity. It is based on the level of soil salinity. Increasing the productivity of saline soils consists in reducing the amount of layered salts spread by plant roots to an acceptable level. To achieve this, the following measures are implemented. Gid Hydrotechnical measures - management of the groundwater level at an optimal depth with the help of specially constructed ditches. Zovur are horizontal and vertical in structure, and their depth and the distance between them depend on the mechanical composition of the soil layer, geological and hydrogeological conditions of the area, etc. Due to the management of the groundwater level with the help of ditches, the rise of salts from the soil layer to the root layer is sharply reduced. Agromelioration measures are salt washing, which is carried out in autumn or early spring. Before salt washing, the fields are plowed, divided into floors with an area of 0.02-0.03 and flooded. When water seeps through the soil layer, it washes the salts contained in it and brings it to the lower layer, and the underground water is collected in ditches and taken out of the field. Agromelioration activities also include types of soil melioration. The purpose of meliorative treatment is to increase the porosity of the soil layer. These actions are carried out with the help of special plugs, softener devices. In heavily saline, plastered, barren, fertile soils with a mechanical composition, the water given for salt washing is absorbed very slowly, the leaching rate of salts in the root layer is extremely low. As a result, the effectiveness of salt washing is low. If these fields are treated with amelioration before salt washing, the leaching of salts will be accelerated. In medium and low salinity fields that are saline or prone to salinity, irrigation with 10-30% excess water compared to plant demand is also recommended. gives a good result. As a result of the excess water being absorbed

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from the root layer, the salts accumulated in the upper layer are washed away between waterings. Agromelioration measures include soil cultivation (autumn plowing, tillage before planting, loosening of rows), timely and adequate watering of crops. If they are carried out in a timely manner, the rise of salts from the lower layer, through the capillary spaces in the groundwater, to the surface of the soil will be sharply reduced. Biological measures - perennial grasses (alfalfa, sudan, grass, etc.) are planted for 2-3 years in saline or salinity-prone fields (medium and low salinity). In the soil of the field covered with upper vegetation, evaporation is sharply reduced and salt does not accumulate in the upper layer. In addition, due to the well-developed roots of perennial grasses, due to the fact that they consume groundwater, they do not rise to the soil level, and the level of soil salinity decreases. The accumulation of salts in the upper layer of the soil is significantly reduced even when the sweet potato plant is grown on saline lands.

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