American Journal Of Agriculture And Horticulture Innovations
(ISSN – 2771-2559)
VOLUME 04 ISSUE 04 Pages: 16-18
SJIF IMPACT FACTOR (2022: 5. 705) (2023: 7. 471) (2024: 8.02)
OCLC – 1290679216
Publisher: Oscar Publishing Services

Journal Website: https://theusajournals.com/index.php/ajahi

Research Article

SALINE SOILS, THEIR EMERGENCE, SECONDARY SALINITIES

Submission Date: April 20, 2024, Accepted Date: April 25, 2024,
Published Date: April 30, 2024
Crossref doi: https://doi.org/10.37547/ajahi/Volume04Issue04-04

Khudayberdieva Begam Nabibullayevna
Independent Researcher, Gulistan State University, Uzbekistan

ABSTRACT

This article describes soil salinity, salinity and the factors that cause their appearance, and the effects of toxic salts on crops.

KEYWORDS

Saline soils, groundwater, secondary salinity, spot salinity, primary minerals.

INTRODUCTION

RELEVANCE AND NECESSITY OF THE TOPIC

The reasons for the origin of saline soils, including salt marshes, are very diverse. One of them, and the most important, is the host rocks, which are distributed in dry climatic conditions and contain various types of salts. Salty rocks, especially sea sediments, come out close to the surface of the earth for various reasons, which causes soil salinization. Such salt deposits are widespread in the Pamir, Hisar mountain ranges, Fergana and Bukhara lowlands. In addition, the geomorphology of the place determines the redistribution of water, as well as salts dissolved in it, in horizontal and vertical directions. As a result, it affects the active movement of soil and water-soluble salts. As a result, it affects the active movement of soil and water-soluble salts. Salt accumulates more in the high and low areas of the field than in the flat parts. The presence of macro- and micro-reliefs causes spotty salinization. Salt spots vary in shape, size, and appearance. It can make up 10-12% of the total area of spotted salt marshes.

Saline soils on the territory of the Republic of Uzbekistan are located in Syrdarya, Jizzakh, Bukhara, Navoi, Khorezm regions. It is widespread in the

American Journal Of Agriculture And Horticulture Innovations
(ISSN – 2771-2559)
VOLUME 04 ISSUE 04 Pages: 16-18
SJIF IMPACT FACTOR (2022: 5. 705) (2023: 7. 471) (2024: 8.02)
OCLC – 1290679216
Publisher: Oscar Publishing Services

Republic of Karakalpakstan, Karshi desert, Surkhan-Sherabad steppe, Central Ferghana and other places.

The flowing waters of the globe have a great influence on the amount and composition of salts in the soils and seepage waters of the river valleys. The mineralization of river water and its chemical composition depend on the following: from the upper part of the river to the lower part, the salinity of seepage water and soil increases, and the amount of chlorine, sodium, and magnesium in the salts gradually increases.

Saline soils on the territory of the Republic of Uzbekistan are located in Syrdarya, Jizzakh, Bukhara, Navoi, Khorezm regions. It is widespread in the Republic of Karakalpakstan, Karshi desert, Surkhan-Sherabad steppe, Central Ferghana and other places. vegetables and other agricultural products are rarely obtained.

THE OBJECT AND SUBJECT OF THE RESEARCH

The main source of salt formation is rocks that are disintegrating due to weathering. During weathering, a large amount of carbonates are formed due to the combination of various salts with chlorides, sulfates, nitrates, silicates, and especially carbon dioxide. Ca, Na, H, Mg are the majority in the cations of salts. Al, Fe, trace elements are also partially found. Salts flowing from the surface of the earth and seepage are transferred to the oceans or closed basins on land, which are considered the final destination, and accumulate there.

Highly saline soils always produce lower yields than non-saline soils. At the same time, they require more labor and resources from the government and farmers.

In the history of irrigated agriculture, there are cases where the yield was so low as a result of the high salinity of the soil that the costs of growing crops were not justified. Such lands were found to be unusable and were not used for planting crops. There were even more cases where they started to take over newly saline or even non-saline lands for irrigated crops, but their intensive salinization occurred during irrigation. Viable land has become unusable and is often not used for irrigated crops, resulting in many crop fields, drylands, and other vacant land among the old irrigated land.

The radical destruction of the natural environment caused by uncontrolled irrigation has determined the change of hydrogeological, geochemical and soil processes and creates the necessary conditions for the increase of secondary salinity, as well as the desertification of the area. Taking a large amount of water for irrigation has sharply reduced the flow of Syrdarya and Amudarya waters to the Aral Sea, as a result of which its level has decreased (by 16 m), soil salinity has increased (from 10-12 to 30-35 g/s). As a result of the lowering of the water level of the Aral Sea, its bottom was opened, intensive deflation and removal of salts from the surrounding areas began. The development of secondary salinity and the deterioration of environmental conditions have also contributed to the deterioration of groundwater and river water quality due to increased drainage flow. This led to increased mineralization of waters, their contamination with pesticides. The poor quality of drinking and irrigation water has affected the quality of products, human health, and the state of natural and anthropogenic ecosystems.

Secondary salinity in often irrigated soils even in relatively deep groundwater (3.5-4) at microrelief elevations, seasonal (summer) spotted salinity in irrigated fields free from cultivated plants begins to appear in the form of This form of seasonal manifestation of secondary soil salinity is not always

American Journal Of Agriculture And Horticulture Innovations
(ISSN – 2771-2559)
VOLUME 04 ISSUE 04 Pages: 16-18
SJIF IMPACT FACTOR (2022: 5. 705) (2023: 7. 471) (2024: 8.02)
OCLC – 1290679216
Publisher: Oscar Publishing Services

noticeable due to its ephemeral character and relatively little damage to cultivated plants. However, seasonal salinity causes damage to cultivated plants, resulting in reduced yield and quality. The danger of seasonal soil salinity is that once it occurs and dies, it can develop into a patchy permanent form of salinity.

CONCLUSION

Seasonal salinity is relatively easy to overcome with amelioration and agrotechnical methods, thereby reducing groundwater and evaporation. Leveling of the earth's surface, careful watering and mechanical processing of crops during the growing season, paying special attention to cultivated plants in the fields, and using alfalfa in crop rotation play an important role.

REFERENCES

1. Ахмедов А.У., Номозов Х.К., Холбоев Б.Э., Тошпулатов С.И., Корахонов А.Х. Проблемы засоления и мелиорации земель Узбекистана (на примере Голодной степи).-Журнал Почвоведение и агрохимия. – Алматы. https://cyberleninka.ru/article/n/problemy-zasoleniya-i-melioratsii-zemel-uzbekistana-na-primere-golodnoy-stepi/viewer
2. Глухова Т. П. Почвенные процессы при орошение минерализованными водами. Фан, -136 с
3. Ковда В. А. Борьба с засолением почв. М: Колос, 1981. – 128 с
4. Намазов Х.К., Халбаев Б.Э., Корахонова Ю.Х. Современное состояние почв Заамин-Хавасткого конуса выноса и их основные свойства. https://elibrary.ru/item.asp?id=41869747
5. Намозов Х., Холбоев Б. Жиззач чўли ерларининг экологик- мелиоратив тавсифи.O'zmu xabarlari Вестник НУУз ACTA NUUz/ https://science.nuu.uz/admin/pdf/Uzmu-31-2019(1-bolim).pdf#page=45 Ташкент, -92 с
6. Тошбеков Ў, Холбоев Б, Намозов Х //Тупроқшунослик ва агрокимё// Ўзбекистон миллий нашриёти. Тошкент 2018 й. 65-б.
7. Холбоев Б.Э. Происхождение засоленных почв и солей устойчивость сельскохозяйственных культур в зависимости от степени. Innovations in Technology and Science Education, 2023
8. Khalbaev B., Namazov Kh. Soil-ameliorative features of the Djizak steppe // European Science Review, 2018. – № 9-10. – P.143-148. https://elibrary.ru/item.asp?id=36792798
9. Kholboev B.E. Amount of Easily Soluble Salts in Water, Type and Level of Salinity in Irrigated Meadow-Gray Soils of Zomin Cone Spread and Its Effect on Soil Melioration. Texas Journal of Agricultureand Biological Sciences https://zienjournals.com/index.php/tjabs/about/editorialTeam
10. Kholboyev B. E. (2024). Reasons for changes in the soil-air regime as a result of irrigation of crops with mineralized water. American Journal Of Biomedical Science & Pharmaceutical Innovation, 4(01), 71–75. https://doi.org/10.37547/ajbspi/Volume04Issue01-11
11. Sh. Xoliqulov., P.Uzoqov., I.Boboxo'jayev. Tuproqshunoslik. Toshkent 2013
12. Bakhrom E. Kholboev*, Norboy B. Japakov, Ikrom A. Rakhmonov, Mamur M. Akhunboboyev and Muzaffar Oblokhlov. Formation, morphology and mechanical composition of meadow-alluvial soils in the Jizzakh desert. BIO Web Conf. Volume 105, 2024 IV International Conference on Agricultural Engineering and Green Infrastructure for Sustainable Development (AEGISD-IV 2024) https://doi.org/10.1051/bioconf/202410505001