Published: April 05, 2021 | **Pages:** 65-69

EVOLUTION OF PROPERTIES OF IRRIGATED GRASSLAND SOILS

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Abstract: This article discusses the change in the mechanical, physical and chemical properties of irrigated grassland soils of the Mirzachul oasis during irrigation. The regularities of evolutionary processes in soil were analyzed.

keywords: soil, mechanical composition, absorption capacity, calcium, magnesium, sodium, potassium, evolution, irrigation.

Introduction

Soil evolution is one of the basic issues of contemporary soil science. As a result of studying the evolutionary processes taking place in the soil, it is possible to predict the events that can occur in the properties of the soil.

Numerous scientific researches have been carried out on the transformation of soils as a result of person activity, i.e. development, irrigation. Including M.L. Sizemskaya [1] aimed to study the dynamics of changes in soils as a result of natural and human factors. At the same time, the greatest attention is paid to the comparison of such indicators as changes in soil reclamation, i.e. dynamics of the groundwater level, increasing mineralization.

Published: April 05, 2021 | Pages: 65-69

V.I. Taburkin [2] published an article on the methodological analysis of the contemporary concept of soil evolution. This article explains concepts such as "soil development", "soil evolution" and "soil self-development". Definitions given by the various authors to the above concepts have been analyzed and it has been pointed out that there are no general opinions.

A.M. Rusanov et al. [3] studied the evolution of saline meadow-black soils, which were irrigated for 50 years and then stopped. The basic changes in the physical and physicochemical properties of the soil are noted. It was observed that the level of mineralization of groundwater increased by 3 times, the amount of sodium increased as a result of rising groundwater.

According to Sh.M. Turdimetov [4] analyzed and compared the evolutionary processes of the soils of the old and newly irrigated parts of Mirzachul. The regularities of changes in the agrochemical and agrophysical properties of the soil as a result of development and irrigation have been studied, and possible evolutionary processes have been predicted.

According to E.I. Ergina [5] believes that two factors influencing soil evolution should be considered. These are: soil change and soil development.

He analyzed data on soil evolution and showed that evolutionary materials also differ due to the complex structure of the soil.

According to Sh.M. Turdimetov et al. [6] conducted experiments to improve the agrochemical properties of the soils of the Mirzachul oasis by planting various secondary crops.

According to A.E. and Bayshanova, B.Sh, the Kedelbaevs identified factors influencing the change in soil properties. It was revealed that the change (decrease) in the amount of

Published: April 05, 2021 | Pages: 65-69

humus in the desert and gray earth regions is different. It was noted that the rate of depletion of humus in the desert area is high.

To determine the evolutionary processes in the soil, we analyzed the results of the changes that occurred in 1994 after 25 years of repeated felling by the author on the irrigated meadow soils of the T. Gulamov massif Saykhunabad region.

The size of particles larger than 0.25 mm is about 0.3-1.0%. The particle size of 0.25–0.1 mm is up to 20%. Particles of 0.1–0.05 mm are not evenly distributed along the cross section of the soil. One of the main properties of gray soils is the predominance of large dust particles in their mechanical composition. The content of large dust particles in these sections was 35-50%.

The increase in the duration of irrigation has led to a slight aggravation of the mechanical composition of the soil. This was especially due to the increase in the amount of large dust particles (0.01–0.05 mm). In the driving layer we can see that its content has increased by up to 6 per cent compared to the initial period.

Changes in the absorption capacity and composition of the soil were also studied. The soil absorption capacity in the soil sections was 13 mg / eq, an increase of 8%. The amount of absorbed calcium was 48.72 percent and the amount of magnesium was 40.81 percent. That is, with a decrease in the amount of calcium by 10 percent, the proportion of magnesium increased to 3 percent. In the lower layers, a decrease in the proportion of calcium and an increase in the proportion of magnesium were also observed. According to these indicators, we can observe an increase in the proportion of both sodium and potassium.

Published: April 05, 2021 | **Pages:** 65-69

Conclusion

As the duration of irrigation increases, the mechanical composition of the soil becomes heavier. As the duration of irrigation increases, the texture of the soil becomes heavier. This is due to the spread of turbid particles during irrigation.

Irrigation with various levels of mineralized water can also lead to changes in the composition of salts, resulting in changes in the amount and composition of absorbed cations.

Information on the absorption capacity and its composition is significant in such activities as the establishment of standards for the application of fertilizers, planning of chemical reclamation processes.

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Published: April 05, 2021 | **Pages:** 65-69

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