

## PHYTOREMEDIATION OF SOILS IN THE AREAS OF POTASSIUM PRODUCTION

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**Introduction.** The relevance of the work lies in the need for reclamation of saline lands in the area of activity of Belaruskali OJSC. During the operation of the enterprise, more than 5 thousand hectares of land have been taken out of agricultural circulation. The purpose of the work is to study the possibility of carrying out phytoremediation of soils in the areas of potash production. To achieve it, the following tasks have been solved: studies of the physical and chemical properties of the soil samples being studied that were taken at a distance of 100 m, 200 m and 300 m from the waste heap were carried out; an analysis of the germination ability of seeds of halophyte plants that were selected for phytoremediation of saline soils was carried out.

**Materials and methods.** Granulometric analysis of the soil samples being analyzed was carried out by the sieve method. Determination of soil moisture was carried out by drying the samples being studied in an dewatering box with electric heating at a temperature of 105°C-110°C and the following determination of the loss of mass fraction of moisture. Determination of the acidity of the soil samples being analyzed was carried out using universal indicator paper. The choice of halophyte plants for soil phytoremediation was carried out on the basis of the climatic features of the region, the degree of soil salinization, as well as the prospects for their further use.

**Results and discussion.** An analysis of the granulometric composition of the soil has showed that the soil samples being studied belong to the type of sandy soils. It was brought out that the soil samples being studied are quite dry, their moisture content was not more than 8%. The pH of the soil samples under analysis is 7.5-8 (alkaline). The following halophyte plants for phytoremediation were chosen: meadow bluegrass, tansy phacelia, sugar beet, and barley. The choice of these crops is due to their simplicity, persistence to diseases and unfavorable weather conditions. According to the results of the germination analysis, the highest percentage on all the soil samples being studied (100 m, 200 m, 300 m from the waste heap, control sample) is observed in barley - 70.0%, 76.7%, 83.3% and 93.3%, respectively. The percentage of germination ability of seeds of all selected crops is 10-20% higher in the control soil sample, which allows us to conclude that the initial increase in the seeding rate during phytoremediation on saline soils by 20-30%.

**Conclusion.** The results of laboratory studies have shown: for phyto-remediation of saline, sandy, dry, alkaline soils, it is possible to use halophyte plants - bluegrass, phacelia, beets and barley; barley have shown the highest tolerance to saline soils; for saline soils, it is necessary to increase the seeding rate of plants by 20-30%; the use of barley grown on saline lands for energy purposes is a promising direction for further research.