EFFECTIVE WAYS TO IMPROVE THE ECOLOGICAL CONDITION OF SOILS.

Jobborov Bakhrom Turgunovich
Yaxshilikov Sardor.
Shermamatova Mahbuba.
Toyloqov Dilmurod
1The National University of Uzbekistan, faculty of Ecology, doctoral student, Ph.D., associate professor of the department of Ecology.
2Gulistan State University students of the 1st year of the field of study of Ecology and environmental protection (by networks and sectors).

Annotation: *This article provides practical recommendations on the impact of industries on soils and their protection. At the same time, information on the effective use of land around industrial sectors is presented.*

Keywords: *Pollution, industry, agriculture, heavy metals, environment, reclamation, technical reclamation, biological recultivation.*

Introduction. In recent years, as a result of the increase in the number of people around the world and the rapid growth of cities, the society's need for mineral resources, energy resources, and construction materials has been increasing. As a result of unreasonable use of natural resources by people, it leads to changes in the topography of the earth, destruction of vegetation and soil cover. As we know, industrial sectors and production enterprises are the main source of pollution for changes in the ecological conditions of soils. In this case, the increase of harmful chemical compounds in the soil leads to the deterioration of its ecological conditions. Effective use of such territories is one of the urgent issues of today. A lot of work has been done by foreign researchers on effective use of industrial areas. In particular, some scientists considered that it is appropriate to take soil samples and study its properties in order to eliminate the contamination of land resources with many chemical compounds in industrialized areas and to use these lands effectively [1]. It is said by a number of researchers that technical processing is effective for controlling and remediating soil contamination with heavy metals in mining areas [2].

Sources of soil pollution can be divided into the following groups:

1. Industrial enterprises. Solid and liquid wastes released into the environment under the influence of industrial enterprises have a toxic effect on living organisms and their communities. For example, benzene, phenol, methane substances from the synthetic fibers production industry; and the machine-building

industry emits nitrogen, mercury, and plastic into the environment and pollutes the soil.

2. Transportation. Nitrogen oxide, lead, hydrocarbons and a number of similar harmful substances are emitted from vehicles. These substances have a negative effect on the biological, chemical and physical properties of the soil and destroy the activity of microorganisms in the soil. Such toxic substances enter the human body through plants and food products from the soil and cause various diseases.

3. Agriculture. In order to meet the demand for agricultural products, the soil is affected negatively and positively as a result of people putting various chemicals on the ground. In addition to increasing soil fertility, it also becomes unusable.

4. Housing and household enterprises. Food, household waste, construction material waste, hotel, hospital, kitchen, and store waste from products used for daily needs also play an important role in soil pollution.

Currently, due to the increase in the type and amount of waste released into the environment, the self-cleaning properties of the soil have decreased, and in some regions this situation is not observed at all. As a result of the accumulation of toxic substances in the soil, it causes changes in the chemical, biological and physical properties of the soil and disrupts the unity of the geochemical environment and living organisms. 35-27 kg/km2 of man-made substances such as mercury and zinc fall to the soil every year. An increase in these substances in the soil slows down the growth and development of cultivated crops. As a result, the yield is drastically reduced.

Research results:

Harmful substances released from industry and agriculture pollute the upper crust of the lithosphere, the soil, more strongly. Air and water pollution directly leads to soil pollution. Solid and liquid wastes from industrial enterprises, wastes from agriculture and household enterprises fall into the soil and cause deterioration of the ecological condition of the soil. Metals and their compounds are radioactive substances, fertilizers and pesticides that pollute the soil. This corresponds to the organization of reclamation works. Relevant studies show that in the application of modern reclamation technologies, the main focus should be on soil reclamation, not just on the establishment of crop factors. This is the most basic and most important task. The following methods are effective in reclamation of contaminated soils:

In order to reduce the harmful effects of man-made lands on the environment, recultivation takes an important place as the main direction of their exploitation. It is advisable to organize technical reclamation works on such lands. Technical

recultivation consists of removing the surface layer of polluted soils and removing the fertile soil layer as a result of technical works [4.9]. Technical reclamation of soils contaminated with heavy metals is carried out using techniques and tools with different design features. At the technical stage of reclamation, contaminated soils are removed. After that, the process of recultivation is carried out as a result of filling this technological horizon with fertile soil [3]. In this case, the upper damaged layer of contaminated areas is removed. Leveling is carried out using special techniques. Then, a layer of fertile soil is brought to the prepared area and filled and leveled. After a potentially productive layer and a certain settling time, a layer of black soil is applied and final leveling is carried out [5.6.10].

To date, a great deal of attention has been paid to the agricultural direction of land reclamation, i.e. biological reclamation, which is the most effective method [7]. The main task of biological reclamation is the formation of the plant cover itself. At this stage, the future purpose of land reclamation is selected, the humus layer is replaced, and mineral and organic fertilizers are applied. Depending on natural and climatic conditions, plants are selected, local conditions are studied, and plants are planted [8]. Planted plants are resistant to heavy metals in the soil, accumulate them and play an important role in increasing soil fertility.

Conclusion. Recultivation contributes to the creation of water, air, heat and food soil regimes favorable for human economic activities, as well as moisture, temperature and air movement regimes in the surface layer of the atmosphere, improvement of the territory and improvement of the natural environment. Reclamation is of great importance for agriculture and provides more stability to this sector of the national economy. It allows to increase the gross yield of agricultural crops and efficient use of the land fund. Recultivation is an important factor for intensification of agricultural production and scientific and technical development in agriculture, it opens wide opportunities for increasing productivity, creating a solid feed base in livestock breeding, and developing deserts and wetlands.

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