



## **The CO<sub>2</sub> emission in urbanic soils in the conditions of intensive technogenic pollution**

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Massive industrial pollution of the environment including soils leads to drastic changes in the vital activity of microorganisms, plants and animals. As objects of research was selected soils of the industrial and residential zones, farmland soils, forest soils. Comparative analysis showed that the emission of CO<sub>2</sub> urbanizable increase compared to the suburban soils in recreational areas is 1.5 times, in the residential and industrial zones - in 3-5 times. In addition, identified a local point located in the vicinity of chemical plants, where soil CO<sub>2</sub> emission increased up to 40 times compared to the suburban soils.

Air technogenic pollution of soils by industrial emissions and transport enhances the mineralization of soil organic matter, increases its lability. These trends are associated with nonspecific adaptive reactions of the soil microbial complex in terms of pollution. Strengthening of the processes of mineralization may be due to the increase in the proportion of fungi in the microbial community. According to numerous reports they are more resistant to pollution compared to bacteria and actinomycetes.

Admission to the soil organic matter of anthropogenic origin also increases the process of mineralization. According to the findings, low concentrations of petroleum products lead to increased "breathing" of the soil.

Strengthening of the processes of mineralization and, consequently, of CO<sub>2</sub> emissions, in the conditions of technogenic pollution of the soils identified in our studies, confirmed by numerous studies by other authors. According to reports in Russia the emission of CO<sub>2</sub> from soils is 4.5 times higher than the industrial receipt of its atmosphere. The contribution of local anthropogenic CO<sub>2</sub> emissions is not so significant compared to the indirect influence of soil pollution on increased CO<sub>2</sub> emissions. Consequently, the expansion of technogenic contaminated soil is becoming a more significant factor adversely affecting the state of the atmosphere.

Thus, the technogenic impact on the soil cover of the city greatly affects the emission of CO<sub>2</sub> from the soil. Increasing in industrially polluted soils is associated with increased mineralization of organic matter and degradation of humus. You can put that in terms of pollution, increased carbon loss depends on changes in the metabolism of soil organisms.