

Degradation of polycyclic aromatic hydrocarbons in soil with sewage sludges

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ABSTRACT

Many publications point out to sewage sludge as a significant sources of polycyclic aromatic hydrocarbons (PAH). Some authors note that the amount of PAHs in plants increases as their concentration in the soil increases. It was often believed that as they are high-molecular compounds, their ability to migrate to plants is limited. In their studies, the authors of the present work took note of the contents of PAHs in sewage sludges used for agricultural purposes. They were used to fertilize a sandy soil in a dose of 10, 50, 100 and 200 t/ha, respectively. The tests were conducted in pot cultures under natural conditions. Osier willow (*salix*) and *dactylis* were grown on the sludge-soil mixtures. The use of sewage sludges for fertilization caused a significant increase in the contents of polycyclic aromatic hydrocarbons in the soils. The application of manure for fertilization resulted in the lowest increase in the contents of these components in the fertilized grounds. It was also found that fertilization with manure did not cause any significant increase in PAH contents in the plants grown. No increase in PAH contents in plants with increasing manure dose was noted either.

Keywords: Sewage sludge; Manure; Fertilizer; Soil; Plant; PAH

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