SOIL POLLUTION IN UKRAINE DUE TO MISMANAGED LANDFILLS

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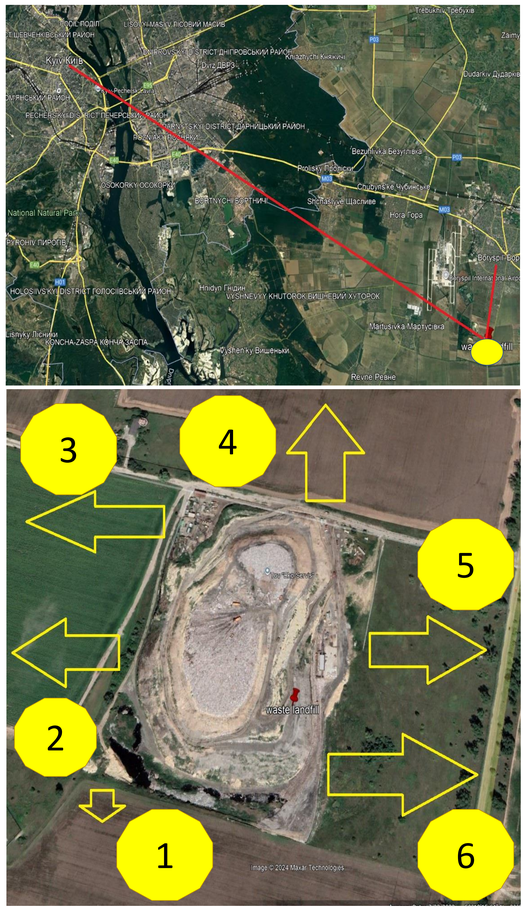
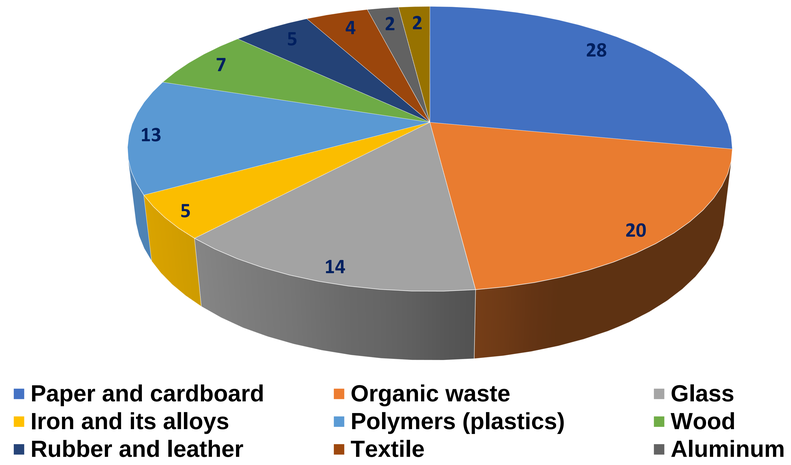
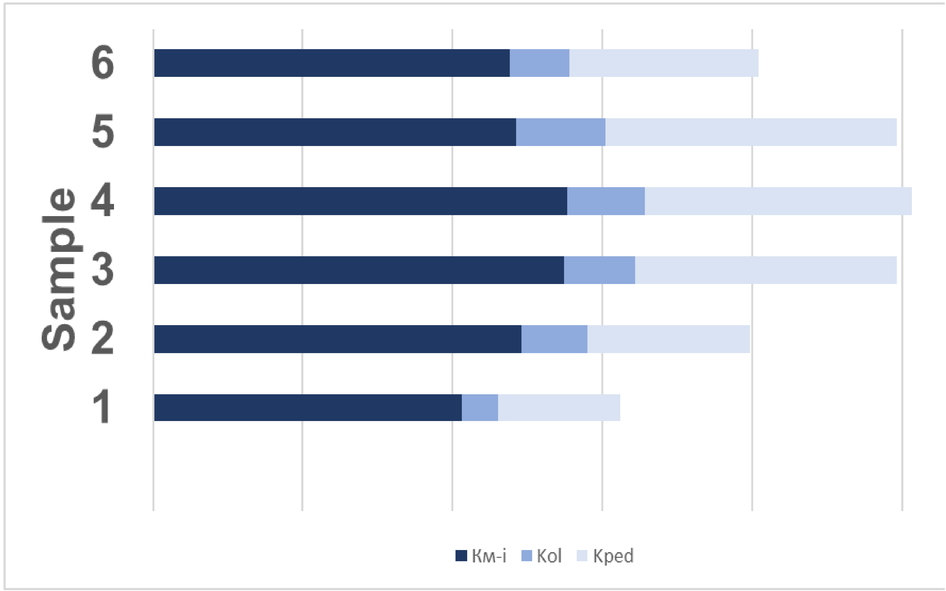
Landfill location: Kyiv region, Boryspil



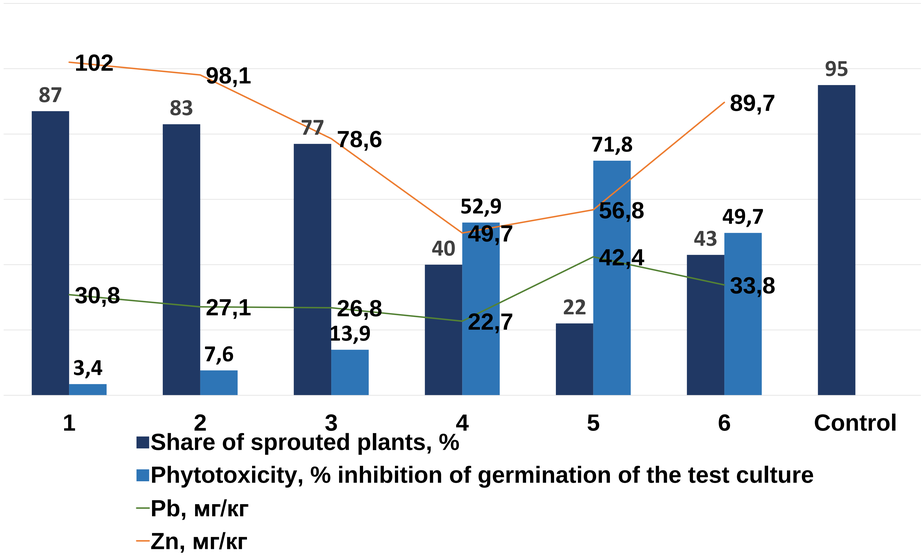
Morphological composition of the average waste sample, %



Directionality of microbiological processes in the soil in the zone of influence of unauthorized landfills



Phytotoxicity of the soil in the zone of influence of the landfill site, %



Main conclusions:

1. According to the change in morphological structure, it was found that the depth of disturbance in the structure of genetic soil horizons ranged from 6 to 50 cm. The soil structure under mismanaged landfills was altered and categorized as being in an anthropogenically modified state.
2. Changes in soil microbial communities resulted in an increase in oligotrophic bacteria and micromycetes, with a corresponding decrease in the number of nitrogen-fixing bacteria.
3. A strong correlation (r = 0.92) was established between the duration of solid waste storage on a particular site and the level of soil phytotoxicity.
4. The contamination of heavy metals (Pb, Zn) in the soil under landfills was higher than standard by 10 units, while next to landfills — 2-3 units higher than the standard.