

## 2. Properties and genesis of Ekranic Technosols of Torun airport

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### Abstract:

Amongst human induced factors, which are leading to soil degradation, which are recognized by European Commission in The Thematic Strategy for Soil Protection (2006) there could be find soil sealing. The researches on sealed soils (Ekranosols or according to WRB 2006, Ekranic Technosols) were firstly conducted in Moscow by Stroganova.

This paper aims to compare physical, chemical and microbiological properties of Ekranic Technosols and neighboring soils, which was not sealed. This is part of larger studies on urban soils of Torun town in Northern Poland

Investigated soil profiles were located in the airport of Torun town, on Vistula River terrace IV. It is the largest consolidated area of Ekranosols to be find in Torun. 3 soil profiles wad dug out: No 1 2 m from the edge of concrete runway; No 2 under the runaway, 1 m from the edge, and No 3 under the runaway, 3 m from the edge.

Standard chemical and physical analysis was conducted, as well as humus fractions and heavy metals.

Biological features was researched in samples taken in profile No 1 from 10 and 50 cm from soil surface and in profiles No 2 and No 3 from layer directly under concrete and from 50 cm below. A number of bacteria and fungi were investigated using Koch's plate-method as well as number of specific groups of bacteria (eg. Nitrifying and Denitrifying bacteria).

It could be concluded that some soil properties of Ekranic Technosols are different from not-sealed soils: destroyed upper part of profile, higher bulk density in layer directly under concrete, higher pH, domination of humic acids, low amount of heavy metals, and strongly reduced microbiological activity in layer directly under the concrete.

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