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THE EFFECT OF MUNICIPAL LANDFILL SITE ON THE OCCURRENCE OF SOIL MESOFAUNA

Key words: chemical pollutants, mites, municipal landfill site, springtails

Summary

The aim of the work was to investigate the effect of municipal landfill in Tarnów on the occurrence of mesofauna (Acari, Colembola) in soil in the landfill site and in its immediate surroundings. The study was conducted at the municipal landfill in Tarnów in 2010–2011. Soil samples were collected in spring, summer and autumn at four sites located in the area of the landfill and in its vicinity. The soil mesofauna was isolated in the Tullgren apparatus. Conducted analyses revealed that the lowest number of soil mesofauna was in soil from plots located near the active landfill sector. There was a significant negative correlation between the content of cadmium, nickel, copper, chromium and polycyclic aromatic hydrocarbons (PAHs) such as: naphthalene, phenanthrene, anthracene, fluoranthene, chrysene, benzo(a)anthracene, benzo(a)fluoranthene, benzo(a)perylene, benzo(a)pyrene, and with the springtails number in the soil. Presence of elements Ni, Cu and Cr in soil had a significant effect on the occurrence of soil mites in the landfill. It has been shown that soil mesofauna was more numerous in the slightly acidic than alkaline soil.