Key results of current research. The adequacy of the considered foundations to solve the problem of environment contamination with PCDD/Fs discharged from the landfills was verified empirically on animals from local natural populations. Samples were collected in different residential areas: in two Moscow City districts in the vicinity of the landfill with municipal and industrial wastes Salaryevo (settlements Kartmazovo and Moskovsky), and compared with those previously obtained in Vietnam (from the ecocide region damaged during the US Army chemical aggression (operation Ranch Hand, 1962–1971).

Chemical analysis of soil and bottom sediments samples taken at a distance of ≈1 km (Kartmazovo) and ≈5 km (Moskovsky) from the landfill body showed good comparability of the WHO-TEQ_{05} levels with octa-substituted and low toxic PCDD/Fs congeners domination in the examined samples. PCDD/Fs congeners' profiles and concentrations in bottom sediments and soil samples collected in 2016 and 2017 were comparable, thus, confirming persistence of contamination.

PCDD/Fs levels and profiles in the tissues were measured for several groups of animals living in the contaminated areas around the landfill: small mammals (Ural field mice *Sylvaemus uralensis*, bank voles *Clethrionomys glareolus*, common shrews *Sorex araneus*), fish (silver carps *Carassius auratus gibelio*) and bush snails (*Fruticicola fruticum*). The general pattern of PCDD/Fs congeners' bioaccumulation was revealed - the highly toxic congeners and primarily TCDD dominated in the animal tissues. The patterns of PCDD/Fs accumulation in mammals naturally exposed to landfill emissions were studied on the bank voles. Evidences has been found that PCDD/Fs accumulated in the tissues of female mammals are transferred to offspring by transplacental and lactation pathways - with the effect of TCDD and other highly toxic congeners accumulation in the tissues of litters. The same effects had been registered in Vietnam among population of the ecocide region in Vietnam. The biological effect of accumulated PCDD/Fs was revealed by the modifications registered on genomic and epigenomic levels. Assessment of hazard of PCDD/Fs currently accumulated in tissues suggests the probable toxicity for humans. The outcomes of toxic effects were manifested by the long-term medical consequences and dioxin pathology. The characteristics of toxic effects' manifestations are specified and discussed. Special attention is paid to the problems of risk to children's health. The prospects are considered of using methods of exposure biomonitoring, i.e. minimize probable health hazard in the presence of small doses of PCDD/Fs contaminating the environment.

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