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Abstracts

List of Participants

Microsatellite DNA variation in populations of red vole inhabiting radioactively contaminated environment

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The Eastern Urals Radioactive Trace zone (EURT) has appeared in the result of Kyshtym Accident (1957), which took place in the Chelyabinsk oblast, Russia. Today the ^{90}Sr is the main contaminant. In this study we used four microsatellite markers to compare genetic diversity in Ural populations of the red vole (*Myodes rutilus*) exposed to low-dose irradiation.

Voies were captured in two impact plots of the EURT zone (distance 13 and 20 km from the epicenter of explosion, initial soil pollution of ^{90}Sr 300-500 Ci/km²). The adjacent background site was beyond the Eastern Urals Reserve, 10 km from the impact ones (near the village Metlino). Voies from the village Shigaevo (Sverdlovsk oblast) were used as a reference group (the global level of contamination). The distance between both - the Shigaevo and the EURT zone populations were approximately 220 kilometers.

The largest differences of genetic diversity were observed between animals from the reference area (Shigaevo) and voies from the EURT zone with high level of ^{90}Sr in bone tissue. The tendency of the positive correlation between average heterozygosity at four microsatellite loci and accumulation of ^{90}Sr in individual level was shown. The some parameters of genetic diversity were higher in voies from the adjacent area (Metlino). This apparently is connected with migration activity of rodents and forming of a flowing population (Grigorkina and Olenov, 2009) i. e. a population with constantly changing set of individuals.

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Key words: *Myodes rutilus*, Eastern Ural Radioactive Trace, ^{90}Sr , microsatellite DNA, migration.