

Genetic diversity of *Taraxacum officinale* Wigg. local populations in the habitats of Nizhniy Tagil different in the level of technogenic load

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Motivation and Aim: Industrial pollutants are strong stressors that can cause degradation of genetic system in population [1]. The aim is to study the level of genetic diversity of local populations of *Taraxacum officinale* growing in the locations of Nizhny Tagil, differed in the level of technogenic impact.

Methods and Algorithms: NA was isolated by the method of S. Porebski [2] with some modifications. Eight UBC primers was used for PCR. Visualization of PCR results was carried out by horizontal electrophoresis on a 1.2 % agarose gel in addition of ethidium bromide in $1 \times$ TBE buffer. The results of all electrophoregrams were processed by the ImageJ program. The presence and absence matrices for each primer were processed in PAST [3] and JeneAlex [4] programs.

Results: In our study, 92 samples of *T. officinale* were analyzed; standardization of the ISSR protocol, quantitative and qualitative assessments of the NA were done; the maximum, minimum and average number of bands per sample, habitat and primer, as well as indicators of genetic diversity: the percentage of polymorphic loci, effective alleles, expected heterozygosity, the Shannon's information index, the genetic distance and identity of Nei, the percentage of molecular variance within and among populations.

Conclusion: The genetic analysis of five subpopulations of *T. officinale* revealed that there are no statistically significant differences between these subpopulations. This indicates that in *T. officinale* species, adaptability to heavy metals in the environment is manifested probably by physiological level – acclimation, which does not change the genetic structure of populations.

References

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