ASSESSMENT OF THE STATE OF ENVIRONMENT OF THE CITY OF KRASNOYARSK BY MEANS OF THE FLUCTUATING ASYMMETRY OF THE SHEET PLATE OF ULMUS PUMILA L.

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Popular method of an assessment of influence of an anthropogenous factor is the assessment of quality of environment in size of the fluctuating asymmetry (FA) of leaves. FA is interconnected with violation of stability of development of a vegetable organism as a result of action of various anthropogenous factors.

The research objective consisted in an assessment of pollution of districts of Krasnoyarsk in size of the fluctuating asymmetry of a sheet plate of an elm stocky. Determination of asymmetry of a sheet plate at an elm stocky and the assessment of stability of development was carried out by V. M. Zakharov's technique with coauthors. Selection of vegetable samples was made on a radial grid from the main sources of emissions of the polluting substances of Krasnoyarsk: The heat power plant – 1 on a site number three – Festivalnaya St. (Leninsky district), heat power plant – 2 on a site number two – Lesopilshchikov St. (Sverdlovsk area), as control chose a site number one on E. Stasova St. (Oktyabrsky district). Collecting material was carried out after completion of intensive growth of leaves at the end of September, 2015. Selection of leaves was done from several close growing plants, about one age, on 100 leaves from each site.

As a result of researches removed that the integrated indicator of FA of a leaf of an elm in points of sampling varied from 0,056 to 0,076. In sites number two and three of FA of a leaf of an elm characterizes a state of environment as critical that corresponds to the fifth point on a scale of an assessment of quality of the environment in size FA. The greatest values of FA are revealed in a zone of influence of a heat power plant – 2. The analysis of FA of separate morphological indicators says that such morphological features of a leaf as length of a vein of the second order, the second from the basis, and distance between the ends of these veins most sensitively react to environmental pollution. Research of the fluctuating asymmetry of an elm of stocky Krasnoyarsk allowed to reveal various extent of violation of stability of development depending on the area of growth of plants. More considerable deviation in development of leaves of a poplar balsam are revealed around influence of a heat power plant – 2. We can explain this phenomenon to that influence plants not only emissions of a heat power plant – 2, but the cement works which is in the studied area. Thus, the indicator of FA of an elm can be used monitoring of a state of environment.

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