



UPDATE OF APPROACHES TO THE RADIATION AND ENVIRONMENTAL MONITORING SYSTEM OF ATMOSPHERIC AIR

Effective and timely assessment of the state of atmospheric air in cities has long been one of the most pressing urban environmental issues. Due to its climatic conditions, the south of Ukraine has always been and will continue to be a region of intensive grain cultivation in the postwar period. In the airspace of the city of Mykolaiv, due to the presence of intensive transit traffic in the pre-war period, there was a chronic excess of maximum permissible concentrations of hazardous pollutants: CH₂O, HF, NO₂, CO, dust. As in most cities, dust and CH₂O are characterized by a particularly high multiplicity of exceeding the standards (Fig.1).

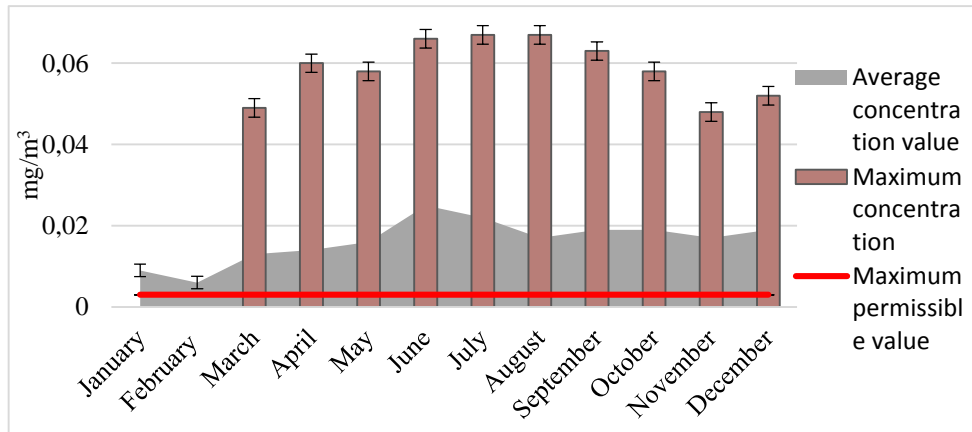


Fig. 1 Typical dynamics of CH₂O in the air of Mykolaiv city

Under the Association Agreement, Ukraine has committed to approximating its legislation to a number of directives that set standards for limiting the content of certain types of pollutants in the air. As part of the implementation of the provisions of Directive 2008/50/EC into the national legislation of

Ukraine, it is proposed to introduce environmental

monitoring of atmospheric air quality based on the expansion of fixed measurements by means of indicative measurements of air quality indicators. In Mykolaiv region, this work is planned in the system of measures of the Mykolaiv Region Development Strategy for 2021-2027 on the topic "European monitoring of the state of atmospheric air in settlements along the highways of Mykolaiv region (Smart EcoMykolaivRegion)." The Mykolaiv-Kyiv highway alone was used by 1,400 trucks in pre-war times, and even more during the grain transportation season. These routes pass directly through populated areas (cities: Nova Odesa, Voznesensk, Yuzhnoukrainsk, Pervomaik, etc. and a number of rural settlements) that are not provided with any protective barriers, as in European countries, and these pollutants saturate the air and enter the respiratory system of residents, settle on agricultural land, etc. It is necessary to provide residents of settlements located along such routes with an atmospheric air monitoring system using indicative measurement stations based on the model of EU countries. This will allow for continuous measurement of fine particles PM₁₀ and PM_{2.5}, NO₂, CO, CH₂O, gamma background (for certain settlements) and join the European air monitoring system, for example <https://waqi.info/uk/>. Наразі в Україні взагалі мало станцій індикативних вимірювань показників стану атмосферного повітря (Рис. 2).

This will also help to enable communities and local governments of settlements with intensive traffic flows to develop policies to limit the impact of these flows on the population and/or compensate for the damage caused (for example, through the introduction of an environmental tax on travel, etc.).

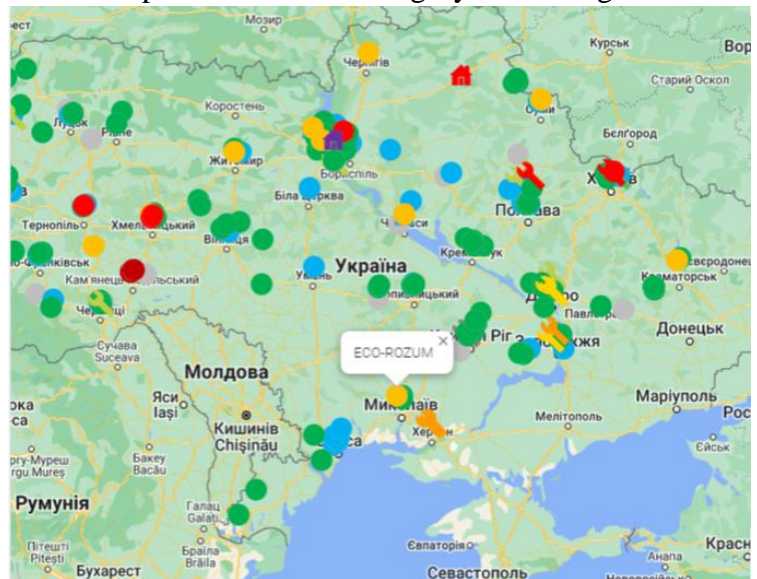


Fig. 2. Indicative air quality measurement stations in Ukraine