TRACE ELEMENTS FOOTPRINT OF TRANSPORT IN URBAN AREAS: CASE STUDY OF JELGAVA CITY

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Abstract
Air pollutants, for instance, the presence of iron (Fe) in the snow indicates conflagration of fossil fuels, car engine, and vehicle bodywork wear. The presence of copper (Cu) in snow is more related to vehicle breaks and their wear, not to exhaust emission. Zinc (Zn) indicates coal combustion and traffic-based emissions. Transport – Cu, Pb, Cr, Cd, Sb. Burning of oil and fossil materials – Cu, Pb, Fe, Zn, Ni, Cr, Mn, Co, Cd, V, Sb. The aim of the study is to determine the impact of cars on air quality. Snow samples were collected on February 12, 2018. The snow exposure period was 7 days. The analysis of snow sample is one of the short-term pollution detection methods for monitoring air pollution by chemical elements in urban areas. The chemical elements were determined by an inductively coupled plasma atomic emission spectroscope (ICP-OES). Samples were filtered through a paper filter and then acidified to 1% HNO_3 and then were analyzed. The main sources of air pollution in Jelgava are the busiest streets and intersections. However, looking at the results brightly, other sources of pollution stand out, which could be private houses with individual heating systems, industry, etc. Industry and transport are the main sources of lead (Pb) copper (Cu) zinc (Zn) pollution, private housing is the main cause of aluminum (Al) pollution, the main street and the uncontrolled burning of waste at private housing areas are the main sources of copper (Cu) pollution, traffic, heating systems, and industry are the main sources of iron (Fe) pollution. For further research more precise evaluation of air quality in Jelgava city is required. There is a necessity to make a sampling for evaluation of long-term air pollution to compare the results with short term air pollution sampling results.

Keywords: Air quality; heavy metals; emmissions.