

BLACK CARBON IN THE ENVIRONMENT

Borut Jereb,

Faculty for logistics, University in Maribor, Mariborska cesta 2, 3000 Celje,
borut.jereb@um.si

Ana Vovk Korže, Mednarodni center za ekoremediacije, Filozofska fakulteta Maribor,
Koroška c. 160, 2000 Maribor,
ana.vovk@um.si

In world measurements is black carbon defined as the second most harmful pollutant of the air. On the local level have studies shown that there is connection between the exposure to the black carbon and diseases like asthma, respiratory infections and congenital defects.

Black carbon and Ångström's exponent were measured by the instrument called aethalometer® Model AE33 (Magee Scientific / Aerosol d.o.o).

Measurements of black carbon were performed on various locations in different periods of time in Mariborska cesta Celje between 19.1. and 13.2. 2017 and between 13.3. and 8.5. 2017.

The highest concentrations of black carbon were noticed in winter period. In spring time from March till May were measured concentrations of black carbon mostly lower. Reason for such result lies in the end of burning season, which is shown by the lower contributions of biomass burning to the black carbon contributions and bigger dynamics of mixing air layer, that influence the mixing of aerosols in urban environment. Contribution of the biomass burning to the black carbon concentrations is tightly connected to the air temperature, since the intensity of heating is higher in cold weather. At contribution of black carbon from traffic temperature does not influence, since the intensity of traffic does not change and stays relatively constant during the year. Wind direction influences concentrations as well, since it can bring aerosols from other remote sources.

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