

## Validation of assessment of dust deposition in urban habitats: tree leaves vs dust trap



**Dávid Tózsér**

University of Debrecen, H-4032 Debrecen, Egyetem ter. 1., Hungary

### Abstract

Settling contaminants such as dust can deposit on the surface of leaves from air. Thus, plants are especially useful biological indicators to assess air pollution. The aim of our study was to validate the assessment of air pollution based on deposited dust on tree leaves. In our study we compared different types ( $d < 5-8 \mu\text{m}$  and  $d > 2-3 \mu\text{m}$ ) of dust contents on leaves of Common Lime (*Tilia × europaea*) and dust trap in the three summer months of 2018 in the campus of University of Debrecen, Hungary. We found significant differences in the different types of dust between tree leaves and dust trap. In dust trap 95 percentage of all dust content was deposited dust ( $d < 5-8 \mu\text{m}$ ), while in the case of leaves 77 percentage of all dust content was deposited dust ( $d < 5-8 \mu\text{m}$ ). Based on the study of correlation between dust content in leaves and dust trap we found significant positive correlation in the case of deposited dust ( $d < 5-8 \mu\text{m}$ ). Further, significant correlation was not found between leaves and dust trap based on fine particle size ( $d > 2-3 \mu\text{m}$ ) dust content. Our results demonstrated that leaves are useful indicators to assess dust deposition similar to the dust trap. At the same time, our results also indicated that dust washing is continuous from leaves by rain, while dust deposition on the surface of leaves is limited because of the capacity of tree leaves.

### Biography:

Dávid Tózsér is an assistant research fellow at the University of Debrecen, in Hungary. He has a PhD in Environmental sciences, and he is now giving lectures, seminars, lab- and field practices to students on environmental protection/assessment issues.

### Speaker Publications:

1 Pollution intensity-dependent metal accumulation in ground beetles: a meta-analysis. **Tózsér D**, Magura T, Simon E, Mizser S, Papp D, Tóthmérész B. Environ Sci Pollut Res Int. 2019 Nov;26(31):32092-32102. doi: 10.1007/s11356-019-06294-5.

Epub 2019 Sep 7.

2. Heavy metal uptake by plant parts of willow species: A meta-analysis. **Tózsér D**, Magura T, Simon E. J Hazard Mater. 2017 Aug 15;336:101-109. doi: 10.1016/j.jhazmat.2017.03.068. Epub 2017 Apr 27. PMID: 28482187

3. Phytoextraction with *Salix viminalis* in a moderately to strongly contaminated area. **Tózsér D**, Harangi S, Baranyai E, Lakatos G, Fülöp Z, Tóthmérész B, Simon E. Environ Sci Pollut Res Int. 2018 Feb;25(4):3275-3290. doi: 10.1007/s11356-017-0699-2. Epub 2017 Nov 16.

4. Antimicrobial resistance genes in raw milk for human consumption. Tóth AG, Csabai I, Krikó E, **Tózsér D**, Maróti G, Patai ÁV, Makrai L, Szita G, Solymosi N. Sci Rep. 2020 May 4;10(1):7464. doi: 10.1038/s41598-020-63675-4. PMID: 32366826 .

[3<sup>rd</sup> World congress on Environmental Toxicology & Health Safety | Webinar | May 25-26, 2020.](#)

### Abstract Citation:

David Tozser, Validation of assessment of dust deposition in urban habitats: tree leaves vs dust trap Update Environmental Toxicology 2020, 3<sup>rd</sup> World congress on Environmental Toxicology & Health Safety; Webinar – May 25-26, 2020 <https://environmental toxicology.toxicologyconferences.com/abstract/2020/validation-of-assessment-of-dust-deposition-in-urban-habitats-tree-leaves-vs-dust-trap>