

Review of: "Probabilistic Assessment of the Heavy Metal Pollution in Debrecen's Topsoil"

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Potential competing interests: No potential competing interests to declare.

I appreciated the work you have done. However, I believe that by attention to the following aspects, you could significantly improve by clarifying or correcting some points:

1. In section 2.3, it could be beneficial to provide more detail regarding the calibration employed and the adjustment curves obtained on the equipment used (XRF) for the measurement of contaminants. Additionally, detailing the sample volume used and indicating if any specific methodology was followed for the measurements would be helpful.
2. The criteria for defining trace elements and pollutant elements are not clearly stated in the text. This should be reviewed throughout the document; for instance, in Table 1, you could classify with a superscript 1 to represent those forming part of the 8 pollutant elements mentioned (without specifying which ones); with a superscript 2, those elements considered as trace elements could be represented. This clarification aims to ensure clarity for the readers. Typically, Fe and K are referred to as major elements (if found in higher concentrations in the sediment matrix), while As and Cr could be considered trace elements (as they are found in small quantities yet are often highly pollutants).
3. More emphasis is needed regarding potential health hazards associated with contaminants, especially those present in higher concentrations, such as Cd, Mo, and Cu, which exceed the value of Y compared to the values in Table 5. This would enhance the impact of your work.
4. Units are missing when writing Cd=1.9; they should also be stated as mg/kg.
5. Table 5 should also include standard deviation (s) values to provide better descriptive statistics, as only the mean is currently presented.
6. The value of ERI=96.9 is indicated to represent a high risk; however, according to the classification range provided in the methodology, it actually corresponds to a CONSIDERABLE RISK.