

Plants as biomonitors of heavy metals

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There are many sources of heavy metal pollutants, including vehicle exhausts, various industries, mines, thermal plants, and other combustion processes, and even volcanic activity. The presence of heavy metals in the environment represent a health risk to people and other living things. A review of approaches to biomonitoring of heavy metals, and specifically the use of plants, so-called phytomonitoring has now been published in the journal *Interdisciplinary Environmental Review*.

Heavy metals are defined as metallic chemical elements that have a high atomic mass and a density at least five times greater than that of water. They are generally toxic to living organisms and can have [harmful effects](#) on [human health](#) if they accumulate in the body.

The review concludes that phytomonitoring represents an economical method of monitoring and so potentially controlling hazardous airborne heavy metal emissions. It is thought that more than 90% of the world's population lives in a place where atmospheric pollutant levels exceed the safe limits set by the World Health Organization.

New insights into the distribution of heavy [metal](#) pollutants are critical to the identification of sources and finding ways to reduce emissions and ameliorate their impact on the environment. Plants can not only be used in the monitoring process but because they can trap atmospheric pollutants, and perhaps pollutants that have entered the soil in which they grow, there is also the potential to use them to remove the pollutants from the environment. Contaminated plants would need to be processed to extract the [heavy metals](#) they have trapped prior to composting or

other means of disposal.

"Information obtained by biomonitoring provides an invaluable resource for the government and industries to focus on regulatory and management efforts, reduce exposure and identify opportunities for making the environment clean and healthy," the team writes.

More information: Mohineeta Pandey et al, Phytomonitoring of Hazardous Metals in Air, *Interdisciplinary Environmental Review* (2022). DOI: [10.1504/IER.2022.10050493](https://doi.org/10.1504/IER.2022.10050493)

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