

# The worm that turned on heavy metal

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Researchers in South America have studied the viability of using earthworms to process hazardous material containing high concentrations of heavy metal for the bioremediation of old industrial sites, landfill and other potentially hazardous areas. They provide details of a possible approach in the *International Journal of Global Environmental Issues* this month.

After [pollinating insects](#), worms are probably the gardener's best friend and they have been encouraged to process garden waste and [soil](#) for generations. The common earthworm, *Eisenia fetida*, could also become a useful tool in the processing and safe management of hazardous solid and liquid wastes with high metal content, according to chemist Lué Merú Marcó Parra of the Universidad Centro Occidental Lisandro Alvarado in Cabudare, Venezuela, and colleagues there and in Argentina.

The team has carried out two feasibility studies on the use of worms in treating waste. The team first used compost produced by [worms](#), vermicompost, as a successful adsorbent substrate for remediation of wastewater contaminated with the metals nickel, chromium, vanadium and lead. The second used earthworms directly for remediation of arsenic and mercury present in landfill soils and demonstrated an efficiency of 42 to 72% in approximately two weeks for arsenic removal and 7.5 to 30.2% for mercury removal in the same time period.

Earthworms could offer an inexpensive and effective [bioremediation](#) alternative to complex and costly industrial cleanup methods, the team

suggests. Given that the accumulation of solid wastes in landfills causes high risk for soils, underground and surface water contamination, so an effective remediation method is increasingly important as toxic metals in a wide range of waste products from obsolete computers to portable electronic devices are discarded in landfill.

**More information:** "Use of earthworms (*Eisenia fetida*) and vermicompost in the processing and safe management of hazardous solid and liquid wastes with high metal contents" in *Int. J. Global Environmental Issues*, 2010, 10, 214-224

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