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Assessment of a soil with moderate level of contamination using lettuce seed assay and terrestrial isopods assimilation assay

F.M.R. Da Silva Júnior, E.M. Garcia, R.M. Baisch, N. Mirlean, A.L. Muccillo-Baisch

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Lettuce (*Lactuca sativa*) seeds play a significant role in toxicity tests of isolated chemicals, pesticides, and environmental samples. Commonly, the main variables under study are the rate of seed germination and root elongation at the end of five days of exposure. Another organisms used in environmental assessment of soil quality are terrestrial isopods. The parameter evaluated in this assay is usually mortality rate. In this study, we suggest to use the daily number of germinated seeds and wet weight of plants, and feeding measurements (consumption rate, assimilation rate, assimilation efficiency and growth rate) in woodlice (*Armadillidium vulgare* and *Porcellio dilatatus*) to detect toxicity of moderately contaminated soil samples. The lettuce seed assay proved to be more efficient in the tested conditions, however, we do not reject the use of feeding parameters in terrestrial isopods in toxicological screening of contaminated soils.

Keywords:

Lactuca sativa; short-term bioassays; soil contamination; woodlice

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