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# Use of *Enchytraeus crypticus* in ecotoxicological tests in Brazil

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Although the acute test with earthworms in soil ecotoxicological assessments has become more usual in Brazil, the use of reproduction tests with earthworms or enchytraeids (ERT) are still limited. In the case of ERT, this is mainly due to the scarce knowledge on the potential of enchytraeids as bioindicators of soil quality. Meanwhile, until an adequate neotropical species is found and recommended, *Enchytraeus crypticus* Westheide & Graefe, 1992 is probably the most indicated test species due to its short generation time and better tolerance to temperatures >20°C when compared to the reference species *Enchytraeus albidus* Henle, 1837. We tested adaptations to the ERT described in ISO 16387 guideline, including the use of tropical artificial soil (TAS), which uses coconut fiber instead of sphagnum peat as an organic matter source, higher temperature and shorter exposure time. *E. crypticus* reproduced well in TAS without contaminant at 22°C and 25°C and showed an average >1000 juveniles per 10 adults after 28 days, which is >20 times the minimum recommended for fulfilling the validity criteria for ERT. On the other hand, it made juvenile counting too laborious and time consuming. Therefore, 2 and 3 weeks of exposure at 22°C was tested resulting in 8 and 13-fold more juveniles than the recommended, and acceptable coefficient of variation only for the longer exposure. Using ERT with carbendazim in a commercial formulation in these latter conditions led to a NOEC of 2.5 mg a.i. $kg^{-1}$ dry TAS and $EC_{50}$ (estimated by hormesis model) of 14.8 mg a.i. $kg^{-1}$. Mortality of 50% of the population after 2 weeks was not observed even at 1000 mg a.i. $kg^{-1}$. New tests will be performed to confirm the results obtained so far and to determine the toxicity of carbendazim at 25°C. Residue analyses of carbendazim in TAS will also be performed.