Uptake- and elimination kinetics of chemicals in mixtures in the springtail *Folsomia candida*.

This PhD-study is preformed within the framework of NOMIRACLE, an EU-funded project in which thirty-eight institutions from 17 countries will work together for 5 years on the development and improvement of methods to analyse, characterise and quantify the combined risks to human health or the environment from multiple stressors. Examples of such multiple stressors are mixtures of chemicals or chemicals in combination with biological or physiological environmental factors, such as pathogens and climatic conditions.

In this study uptake and elimination kinetics of chemicals in mixtures in the soil dwelling springtail *Folsomia candida* are investigated. In the first phase the organisms were exposed to the metal Nickel and the organophosporus pesticide Chlorpyrifos in soil. The second phase included experiments with nickel and phenanthrene, and with fluoranthene, pyrene and phenanthrene. By following the development of toxicity with time, additional information was gathered on the toxicokinetics of the test compounds, single and in mixtures. This approach also enabled a more thorough analysis of the often complex interactions of the mixtures. For this purpose, it is collaborated with the department of Theoretical Biology of the VU, applying DEB based modelling. Experiments were also performed to determine effects of cadmium on the uptake kinetics and metabolism of pyrene in *F. candida*.

**Duration:**

4 years

**Participants:**

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