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## Effects of linuron on a rooted aquatic macrophyte in sediment-dosed test systems

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Effects of linuron on the sediment-rooted aquatic macrophyte *Myriophyllum spicatum* L. Were studied in sediment-dosed test systems following an OECD test guideline with extended test duration. Sediment, pore water, overlying water and macrophyte shoots were sampled weekly for chemical analyses. Linuron was stable in the sediments. Sediment and pore water concentrations were in equilibrium after 48 h. Overlying water concentrations increased over time, but did not reach equilibrium with pore water concentrations and were 1000 times lower. Mass balances showed a rapid uptake of linuron by macrophyte roots. Known pathways and the compound's properties support the conclusion that *Myriophyllum* takes up linuron from pore water directly through the roots. Modeling supported the conclusions that high concentrations in the shoots could be explained by translocation of linuron by the roots to the shoots. The fluxes calculated for linuron support this interpretation. At the experimental start, several pathways played a role, i.e. linuron fluxes from pore water to overlying water and from pore water to roots. The flux from pore water to overlying water decreased later, while the translocation fluxes from roots to shoots increased. Hence, effects on macrophytes in this type of sediment toxicity test should be expressed in terms of pore water concentrations. Sensitivity of water- and sediment-dosed test systems will be discussed in the light of compound properties.

### Biography

Gertie H P Arts studied Biology at the Radboud University in Nijmegen, The Netherlands. She has completed her PhD in the Natural Sciences from the same university. She works at Alterra as a Senior Scientist in the Environmental Risk Assessment team. She has a focus on aquatic macrophyte ecotoxicology and risk assessment. She has published more than 100 papers in reputed journals and reports, and is serving as an Editor for the Journal of Environmental Toxicology and Chemistry.

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