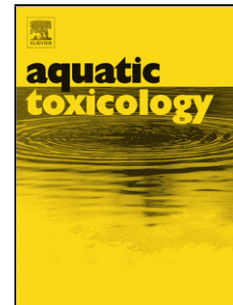


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TRANSCHEM project - Part I: Impact of long-term exposure to pendimethalin on the health status of rainbow trout (*Oncorhynchus mykiss* L.) genitors

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Highlights

- Pendimethalin exposure occurred over two spawning seasons
- A time lag of more than five weeks was observed for egg maturation in contaminated females
- An 18-month exposure period affected immune system and antioxidative defences

Abstract

Pendimethalin is a herbicide active substance commonly used in terrestrial agricultural systems and is thus detected at high concentrations in the surface water of several European countries. Previous studies reported several histopathological changes, enzymatic antioxidant modulation and immunity disturbance in fish exposed to this pesticide. The objective of this work was to investigate the direct effects of long-term exposure to environmental concentrations of pendimethalin over a period of 18 months in rainbow trout (*Oncorhynchus mykiss*) genitors. To do so, an experimental system consisting of eight similar 400L tanks with a flow-through of fresh river water was used to perform daily chemical contamination. Fish were exposed to 850 ng/L for one hour and the pendimethalin concentration was then gradually diluted during the

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