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**TITLE:** Influence of exposure duration on the toxicity of triclopyr ester to fish and aquatic insects.

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**SOURCE:** ARCHIVES OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY; 26 (1). 1994. 124-129.

**SECONDARY SOURCE ID:** BIOSIS/94/06150

**ABSTRACT:** BIOSIS COPYRIGHT: BIOL ABS. Flow-through toxicity tests were conducted to determine the effects of exposure time on the toxicity of triclopyr butoxyethyl ester (Garlon 4) to fish (rainbow trout and chinook salmon) and stream insects (Hydropsyche sp. and Isonychia sp.). The toxicity of triclopyr ester to fish increased with exposure time, but the rate of increase in toxicity decline with increasing exposure duration. Median lethal concentrations for rainbow trout exposed for 1, 6, or 24 h were 22.5, 1.95, and 0.79 mg/L triclopyr ester (expressed as acid equivalent, nominal concentrations), respectively. Comparable values for chinook salmon were 34.6, 4.7, and 1.76 mg/L. The toxicity of triclopyr ester to aquatic insects also increased with increasing exposure time, but was considerably less than the toxicity to fish. There was no significant mortality (chi-square  $p > 0.05$ ) of insects following 3-h exposures to the maximum test concentration of approximately 110 mg/L. Median lethal concentrations following 9- and 24-h exposures were 14.9 and 4.0 ml/L for Hydropsyche sp., and 37.0 and 8.8 mg/L for Isonychia sp., respectively. At each exposure time in the toxicity tests, there was a sharp increase in mortality over relatively small increases in concentration, resulting in extremely steep slopes of the probit lines (6.3-33.8), and indicating an apparent response threshold. The herbicide exhibited delayed lethal effects, particularly in fish, but only at short term exposures to higher concentrations. The risk of adverse effects on fish and aquatic insects from triclopyr ester contamination, based on the results of these time-toxicity tests, is discussed.

**MAIN MESH HEADINGS:** ENVIRONMENTAL POLLUTANTS/\*POISONING  
\*OCCUPATIONAL DISEASES  
\*FISHES

**ADDITIONAL MESH HEADINGS:**

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**FRESH WATER**  
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**PHYSIOLOGY, COMPARATIVE**  
**PATHOLOGY**  
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**CAS REGISTRY NUMBERS:** 64700-56-7

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**KEYWORDS:** Ecology; Environmental Biology-Limnology  
 Ecology; Environmental Biology-Wildlife Management-Aquatic  
 Biochemical Studies-General  
 Toxicology-Environmental and Industrial Toxicology  
 Public Health: Environmental Health-Air, Water and Soil Pollution  
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