TITLE: Fate And Effects Of Triclopyr Ester In A First-Order Forest Stream.

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ABSTRACT: BIOSIS COPYRIGHT: BIOL ABS. The fate and the effects of triclopyr butoxyethyl ester (TBEE) were investigated in a first-order forest stream. Quantification of TBEE in stream-water samples showed maximal concentration of 0.848 and 0.949 mug ml-1 at sampling stations nearest two discrete injection points. Average TBEE concentrations ranged from 0.32 mug ml-1 at stations nearest injection points to 0.02 mug ml-1 approximately 225 m downstream. Periods of exposure to aqueous TBEE concentrations in excess of 0.001 mug ml-1 ranged from 55 min in fast-flowing upstream locations to 120 min at slower, downstream sampling locations. Simultaneous quantitation of triclopyr acid (TRI) residues in stream-water samples indicated that natural degradative mechanisms rapidly converted TBEE to TRI, and that sorption to natural allochthonous materials occurred as chemical pulses moved downstream. Chemical behaviour resulted in short-term, pulse-type exposures to TBEE, with decreasing magnitude and slightly increasing duration in relation to downstream distance. Short-term, low-level exposures generated in this stream treatment resulted in slightly elevated drift (3- to 4-fold increase) for up to 36 h, but no measurable reductions in abundance of benthic invertebrates. Increases in chlorophyll a concentrations in epilithic periphyton from treated sections indicated short-term eutrophication or growth-regulation effects of the herbicide applications.

MAIN MESH HEADINGS: *AIR POLLUTION
*SOIL POLLUTANTS
*WATER POLLUTION

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