

Concentrations Of 2,4-D And Triallate In air, Deposition, Surface Film And Water At Two Saskatchewan Dugouts.

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ABSTRACT

The herbicides 2,4-D (2,4-dichlorophenoxyacetic acid) and triallate [*S*-2,3,3-trichloroallyl di-isopropyl(thiocarbamate)] are extensively used to control broad leaf and wild oat (respectively) weed infestations in Canadian wheat crops. In 1990, for example, more than 3.8 million kg of 2,4-D and 2.7 million kg of triallate were applied in the three prairie provinces of Alberta, Saskatchewan and Manitoba. These two herbicides appeared in the air with levels as high as 3.9 ng m⁻³ (2,4-D) and 60.04 ng m⁻³ (triallate) recorded in the summers of 1989 and 1990, near Regina, Saskatchewan. Concentrations of these two herbicides were also measured in bulk atmospheric deposition (wet plus dry) and in pond water and surface film. Maximum measured levels of 2,4-D were: 3550 ng m⁻² da⁻¹ (bulk deposition); 332 ng m⁻² (surface film); and, 290 ng L⁻¹ (pond water). Maximum levels of triallate were: 2300 ng m⁻² da⁻¹ (bulk deposition); 212 ng m⁻² (surface film); and, 500 ng L⁻¹ (pond water). The highest concentrations of the herbicides tended to be found during or immediately after the time when regional spraying programs occurred. The movement of the herbicides in the environment will be discussed with relationship to the four "compartments" studied.