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**Atmospheric Environment (1967)**  
 Volume 14, Issue 9, 1980, Pages 1017-1025

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doi:10.1016/0004-6981(80)90033-5  
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## Two models of long-range drift of forest pesticide aerial spray

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Received 5 November 1979; revised 29 January 1980. Available online 14 April 2003.

### Abstract

Long-range drift and dry deposition of an aerial insecticide spray onto a forest are calculated from gradient transfer and Markov chain models to 80 km downwind of the spray line. Horizontal homogeneity and neutral stratification with a capping inversion are assumed. The spray droplets are seven-eighths water which evaporates and one-eighth non-volatile Fenitrothion; the initial drop-size distribution is highly polydispersed with mass mean diameter ~ 82 µm.

Results show that at 80 km the models agree within a factor of 2.3 on the fraction of Fenitrothion still airborne (~0.2%), to within a few

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per cent on the mode of the spectrum of surviving droplets,  $\sim 22 \mu\text{m}$ , and substantially on the largest surviving droplet,  $\sim 40 \mu\text{m}$ . Results are shown to be sensitive to the assumed source configuration, the initial droplet spectrum and the droplet evaporative behaviour.

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