

SulfurylFluorideAgainstFourBeetle_JEconEnt_V83I3_June1990

"Efficacy of Sulfuryl Fluoride Against Four Beetle Pests of Museums (Coleoptera: Dermestidae, Anobiidae)"

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Journal of Economic Entomology, Volume 83, Issue 3, 1 June 1990, Pages 879-882,
<https://doi.org/10.1093/jee/83.3.879>

Published: 24 September 2014

Abstract

The efficacy of sulfuryl fluoride against adults, larvae, and eggs of four coleopterans—furniture carpet beetle, *Anthrenus flavipes* LeConte; black carpet beetle, *Attagenus megatoma* (F.); cigarette beetle, *Lasioderma serricorne* (F.); and hide beetle, *Dermestes maculatus* (De Geer)—was determined. Adults were generally more susceptible to sulfuryl fluoride than larvae. Eggs were the most tolerant stage; 7-30 times more fumigant was required compared with rates required to kill adults and larvae. Our results indicated that the cumulative dose required to kill 99% of *A. flavipes* larvae was 156 mg·h/liter. This rate exceeds the current recommended rate (approximately 72 mg · h/liter) of sulfuryl fluoride for control of carpet beetles. Eggs of cigarette beetles exposed to higher concentrations of sulfuryl fluoride developed at a slower rate. For multiple fumigation intended to control adults and larvae rather than eggs, the delayed embryonic development of eggs exposed to the sublethal dose of sulfuryl fluoride should be considered in determining the timing between fumigations.