

## **CONTROL OF STORED PRODUCT PESTS WITH VIKANE GAS FUMIGANT (SULFURYL FLUORIDE)**

Brian M. Schneider and Preston L. Hartsell

Vikane\* gas fumigant (sulfuryl fluoride) has been marketed for over 35 years for control of structure infesting insects, primarily drywood termites (Kalotermitidae). Vikane is an ideal fumigant for structural fumigation; however, effective dosages for stored product pests have been determined for only a few species and limited temperatures. This paper presents lethal dosage results reported as CT products (Concentration of Fumigant x Exposure Time) in mg-h/l for the egg stage of several stored product insect pests.

Tolerance to Vikane increased as *Plodia interpunctella* eggs aged. The *P. interpunctella* eggs were more susceptible to Vikane than the three beetle species tested, with 98.4% control achieved at 238 mg-h/l. *Trogoderma variabile* was the most tolerant species; at 25°C, a CT of 619 mg-h/l was necessary to achieve 96.9% egg kill. A CT of 484 mg-h/l resulted in 95.1% kill of *Tribolium castaneum* eggs, and a CT of 490 mg-h/l resulted in 99.5% kill of *Tribolium confusum* eggs. The beetle species exhibited a flat dose response at higher dosages. Additional trials with refined dosages, shorter exposure periods, and varying temperatures are necessary to determine effective dosages across the range of expected field-use conditions.

\*Trademark of Dow AgroSciences LLC