

Donahaye, E.J., Navarro, S., Bell, C., Jayas, D., Noyes, R., Phillips, T.W. [Eds.] (2007) *Proc. Int. Conf. Controlled Atmosphere and Fumigation in Stored Products, Gold-Coast Australia. 8-13th August 2004.* FTIC Ltd. Publishing, Israel. p. 611

## **CONTROL OF THE SILVERFISH *LEPISMA SACCHARINA* WITH SULFURYL FLUORIDE**

CH. REICHMUTH<sup>1</sup>, G. BINKER<sup>2</sup>, AND M. FAULDE<sup>3</sup>

<sup>1</sup> *Federal Biological Research Centre for Agriculture and Forestry, Institute for Stored Product Protection, D-14195 Berlin, GERMANY, E-mail: C.Reichmuth@bba.de*

<sup>2</sup> *Binker Materialschutz GmbH, 91207 Lauf a. d. Pegnitz, Germany*

<sup>3</sup> *Zentrales Institut des Sanitätsdienstes der Bundeswehr, Lab. Med. Zoologie, P.O.Box 7340, 56068 Koblenz, Germany*

### **ABSTRACT**

The silverfish *Lepisma saccharina* belongs to one of the most primitive families of insects on this planet. Being active at night, the insect leaves its shelter, searching for organic foodstuffs including glue and organic paint in antique books in libraries. Their feeding damage in old books and paintings is completely irreversible and is compounded over the years. It is often recognized only years or decades later, since these precious pieces are not so often systematically investigated for possible damage by these insects. A continuous low relative humidity, of the atmosphere where the artefacts are stored, is the recommended approach to prevent silverfish infestation. However, there are situations, where immediate and thorough control is required. Only very few chemicals are suitable for silverfish control in museums and libraries, because most substances react with the dyes or other parts of the artefacts. Methyl bromide was one of the most important fumigants to be used for this purpose. In this report, sulfuryl difluoride was tested to control all stages of silverfish in a series of chamber fumigations. The dose ranged from 94 to 5997 gh/m<sup>3</sup>, the temperature was 18°C, the relative humidity 60%. After the treatment the samples were examined for survivors for 12 weeks at 22°C and 80% relative humidity.