EFFECTS OF CARBONYL SULFIDE ON *SITOPHILUS GRANARIUS, FUSARIUM AVANACEUM,* AND*FUSARIUM CULMORUM,* AND WITH REGARD TO POSSIBLE CORROSION ON COPPER,

Rudy PLARRE[1] and Christoph REICHMUTH[2]

[1]Stored Product Insects Research Unit, USDA-ARS, Department of Entomology,
1630 Linden Dr., University of Wisconsin, Madison - WI 53706, USA,
Fax: 12126082623322

[2]Federal Biological Research Centre for Agriculture and Forestry, Insitute for Stored Product Protection, Königin-Luise Straße 19, D-14195 Berlin
Fax: 49308304284

All life stages of *Sitophilus granarius*, as well as the fungi *Fusarium avenaceum* and *Fusarium culmorum*, were tested for their susceptibility to different times of exposure and concentrations of carbonyl sulfide (COS) at 20°C and 70% R.H. Complete kill of *S. granarius* occurred at concentrations of $18gm^{-3}$ COS for 120 hours or $32gm^{-3}$ COS for 72 hours. The eggs were most tolerant to the toxic gas, followed by pupae and adults. Larval stages were most susceptible to the fumigant. Sublethal dosages prolonged the developmental periods of the immature life stages. Lethal dosages on *S. granarius* caused growth inhibition in *F. avenaceum* and *F. culmorum*, though the fungi recovered fully after treatment. In the presence of high relative humidity COS was presumably degraded partly to H_2S which caused corrosion on copper. Carbonyl sulfide is discussed as being a possible alternative to methyl bromide.