



NOTE: Specific content related to the abstracts and presentations at the Eighth International Conference on Mercury as a Global Pollutant will remain strictly embargoed until the day of the scientific session.

Monday, August 7, 2006

Poster Session

Final Abstracts

M-47

Antagonism between methyl mercury and selenium in fish organs: investigating the mechanism.

Dan Yang (Presenting Author, Laurentian University), Xu Ye (Laurentian University), Yu-Wei Chen (Laurentian University), John Gunn (Laurentian University), Nelson Belzile (Laurentian University)

Selenium has been known for long to have interactions with mercury in living organisms. Many lakes around Sudbury have different selenium levels due to the mining and smelting activities in the area, and they are then ideal for the studies of the interactions between selenium and mercury in aquatic systems. We have sampled fish and water from these lakes and determined the concentrations of total mercury, methylmercury and total selenium in different organs. The results show a converse relationship between the concentration of total selenium and that of methyl mercury in the fish tissues, namely, higher total selenium usually associates with lower methyl mercury or vice versa. We are now conducting in-depth studies to elucidate the underlying mechanism of this antagonistic effect.

M-48

Selenium-mercury interactions in aquatic organisms

Nelson Belzile (Presenting Author, Laurentian University), Yu-Wei Chen (Laurentian University), John Gunn (Laurentian University), Yves Alarie (Laurentian University), Xu Ye (Laurentian University), Dan Yang (Laurentian University)

The protective effect of selenium on mercury assimilation has been identified in different biological aquatic organisms from fish to invertebrates. It is now clear that the concentration of dissolved Se in lake water plays a significant role on the levels of total and methyl mercury (MeHg) in tissues of fish and other invertebrates. In order to understand the possible mechanism controlling the antagonistic effect of Se on Hg assimilation, we are now measuring the levels of Hg, MeHg and Se in the muscle, liver and brain as well as the activity of various enzymes in 1-year old walleye samples collected over the last season. Those results will be presented and discussed at the meeting.