

# ABSTRACTS

## BIOLOGICAL SCIENCES - AQUATIC

### EFFECT OF ROTENONE ON DIATOM VIABILITY <sup>MAS</sup>

Scott Brady, Keith and Barbara Cooksey

Department of Microbiology, Montana State University, Bozeman, MT 59717

Diatoms play an important role in stream ecology, but their viability may be compromised by rotenone. Rotenone is a compound used by government agencies to control unwanted fish. I am using a diatom as a model organism to predict the impact of rotenone on stream ecology. I have devised a way to measure the effects of this compound on diatoms, which, if negative, have the potential to affect the entire ecosystem. Two methods were employed for this purpose. Motility has been shown to be a good indicator of cell health, so this was examined first. Cells were grown in a defined medium and prepared in a cell suspension. This suspension was divided, treated with rotenone for tests, left untreated for controls, and dispensed into test tubes. Cells were videotaped on a microscope slide at one, four, and twenty-four hour intervals to calculate percent motility. A reduction in percent motility compared to healthy cells indicated an effect of the rotenone. The second method employed was an adhesion assay. It has been shown that diatoms contribute to sediment stability, which requires adhesion. To measure the percent adhesion, a cell suspension of 400,000 cells was placed in a beaker containing a cover glass. Triplicates are made of each test and control. The number of diatoms attaching to the cover glass is measured by determination of chlorophyll a and the results presented as a percent of the control.

## BIOLOGICAL SCIENCES - BOTANY

### DO STRIP BARK CONIFERS REFLECT CO<sub>2</sub> FERTILIZATION IN THE 20<sup>TH</sup> CENTURY? <sup>MAS</sup>

Gabriel Bellante and Lisa Graumlich

Mountain Research Center

I propose to investigate the potential for CO<sub>2</sub> fertilization of high elevation conifers in the Tobacco Root Mountains. At upper tree-line, it has been traditionally thought that tree growth is governed by growing season temperature. However, in the past several decades new research evidence has demonstrated unprecedented growth rates in upper tree line forest that have been ascribed to enhanced CO<sub>2</sub> fertilization. Strip bark trees in particular show this accelerated growth rate. Trees with the strip bark morphology are characterized by their

---

*Title footnote indicates organization, location and date presentation was made:*

<sup>MAS</sup>Montana Academy of Sciences Annual Meeting, Bozeman, MT, April 20-21, 2001

<sup>TWS</sup>Montana Chapter of the Wildlife Society Annual Meeting, Butte, MT, Feb. 28-March 2, 2001