Distribution of Selenium in Kendrick Irrigation Project Waters in South-east Wyoming., Distribution of Selenium in Kendrick Irrigation Project Waters in South-east Wyoming. (S11patterson162731-Oral)

Authors:

- M.M.Patterson University of Wyoming, Dept. of Renesable Resource
- K.J.Reddy University of Wyoming, Dept. of Renewable Resource

Abstract:

Selenium (Se) is an essential micronutrient for humans and animals, but can be toxic in excess. Safe drinking water limits are generally set at 10 ug L-1. Irrigation return flows can be an important source of Se in surface and subsurface waters, especially in areas of the western US that overlay Cretaceous marine shales. The objectives of this project, located in Natrona County, Wyoming, were to determine Se concentrations in irrigation source and return water compared to a previous study and to investigate possible remediation strategies. Water from irrigation sources and drains was sampled monthly at twenty-two locations both on and off of the shale. Selenium was analyzed by hydride-generation AAS. Concentrations of Se in the source water did not exceed 8 ug L-1, but drain water concentrations ranged from <1 to 429 ug L-1, similar to the previous study. Total Se loads were lower in the present study, with few exceptions. Passive adsorption treatments using cupric oxide have shown potential to remove Se in the lab and may be useful in reducing Se input from irrigation to surface waters.

Corresponding Author Information:

Michelle Patterson University of Wyoming 469 1/2 N. 6th St. Laramie, WY 82070 phone: (307) 766-2204 e-mail: mickeyp@uwyo.edu

Presentation Information:

Presentation Date: Wednesday, November 13, 2002 Presentation Time: 9:30 am

Keywords:

Selenium, irrigation, Kendrick, Cody