Desorption of Pb in two Florida shooting range soils: A column leaching study. (S11-hardison115136-Poster)

Authors:

- D.W.Hardison Jr. University of Florida
- L.Q.Ma University of Florida
- P.Nkedi-Kizza University of Florida
- X.Cao University of Florida

Abstract:

Lead contamination has been documented in the soils of shooting ranges, which implies particular concern to Pb contamination in groundwater in the state of Florida due to sandy soils and the weather conditions. This study examined desorption and mobility of Pb down the soil profile of two different shooting ranges in the state of Florida. The first shooting range soil (S1) was sandy with a low CEC, low organic matter, as well as low soil pH. The second soil (S2) was calcareous with a high CEC, high organic matter, as well as high soil pH. Intact soil columns (116 cm) were collected from shooting range soils at the base of the berm. Columns were first saturated from bottom with a background 0.004M KNO3 electrolyte solution. Saturated flow was established from the top using a simulated rainwater solution including a Br tracer. Samples were collected and analyzed for Pb, Br, inorganic carbon, organic carbon, as well as pH. Elevated Pb concentrations were observed in the leachates of the two soils with more Pb leached out from S2 (up to 1 ppm) than S1 (up to 50 ppb). Our study shows that Pb can be mobilized in shooting range soils, thus may leach into groundwater causing contamination.

Corresponding Author Information:

Donald Hardison Jr. University of Florida 2169 McCarty Hall, University of Florida Gainesville, FL 32611 phone: 352-392-8662 fax: 352-392-3902 e-mail: donny55@ufl.edu

Presentation Information:

Presentation Date: Monday, November 11, 2002 Presentation Time: 10:00 am-12:00 pm Poster Board Number: 1617

Keywords: Pb, shooting range, Intact Soil Core, column leaching