

**International Workshop on  
Environmental Aspects of Coal Ash Utilization**

Tel Aviv, Israel  
December 15<sup>th</sup> – 16<sup>th</sup> 2009

**Monitoring of surface runoff, soil loss and microelements leaching  
from fly ash road embankment**

M. Ben-Hur

Institute of Soil, Water, and Environmental Sciences

**Abstract**

It was hypothesized that cover of fly ash road embankment by shallow soil layer will prevent surface movement of microelements from the fly ash material. This hypothesized was tested in field experiment that was conducted in access road to Jiser el Zarka village, which was filled in with fly ash and covered with 20 cm of local soil (sandy loam). Surface runoff, soil loss, and water flow from the interface between the soil and the fly ash layers were collected and measured during rainstorms in the 2007-2008 and 2008-2009 winters (9 and 10 years after the construction of the fly ash road embankment). Electrical conductivity and pH values and concentrations of macro- and micro-elements were measured in the surface runoff and the interface flow. Larger amount of runoff and soil loss were measured in the experimental plots in the fly ash than in the control (earth embankment with no fly ash) plots. This was, most likely, because the low hydraulic conductivity of the fly ash layer. Likewise, higher concentrations of microelements, B in particular, were found in the surface runoff from the fly ash than from the control plots. Discussion of these results will be presented in the presentation.