

## Assessment the Influence of Bitumen Emulsion PAHs Content in Arid Land

**Authors :** Jalil Badamfirooz

**Abstract :** Soil wind erosion has a negative impact on the environment. Mulching is one of the most efficient soil protection techniques. Bitumen emulsion has recently been utilized as a soil cover that is sprayed directly over the soil and forms a thin film. The thin coating of bitumen emulsion prevents soil erosion and keeps moisture in the soil. Besides, some compounds release into the soil and cause environmental problems. In the present study, the effect of bitumen emulsion on the release of polycyclic aromatic hydrocarbons (PAHs) into the soil is studied in an arid land located in the central part of Iran. The soil was Loamy-Sand and saline with a pH of 8.03. Bitumen emulsion was used in this study as mulch at a rate of 4 L m<sup>2</sup>. The effect of this mulch on soil properties was investigated after 6 months of mulch application. Then PAHs concentrations were determined in samples collected from different depths in bitumen emulsion sprayed and control soils. In general, bitumen emulsion application on soil led to a significant increase in some PAHs, which was higher than soil pollution standards critical level of pollution for commerce, groundwater protection, pasture forest, and park and residence uses.

**Keywords :** mulch, bitumen emulsion, arid land, PAH

**Conference Title :** ICASSM 2023 : International Conference on Agricultural Science and Soil Management

**Conference Location :** Ottawa, Canada

**Conference Dates :** July 03-04, 2023