Int J Waste Resour 2016, 6:3(Suppl)
http://dx.doi.org/10.4172/2252-5211.C1.003

Grey water reuse in UAE as an alternative water source

Mohamed M Mohamed and **Rezaul K Chowdhury**
UAE University, UAE

UAE is one of the most water scarce countries but their water consumption is significantly high. One solution by which this can be achieved is reuse of alternative water sources such as grey-water, treated sewage effluent, rainfall and storm water runoff. Grey water is the domestic wastewater generated from shower, wash basin and laundry purposes. Since rainfall and storm-water are not an abundant water source in arid regions, there is a growing interest in the reuse of grey-water for non-potable consumptions such as toilet flushing and gardening. The reuse of grey-water has well known benefits on potable water savings, however significant knowledge gap is exist on their appropriate treatment and supply to end user at cost effective way. Water Sensitive Urban Design (WSUD) technologies such as bio-retention basin and permeable pavement are well known source control technologies. In this study, we will investigate pilot studies of grey-water reuse through WSUD systems. Outcomes from the study will help to implement multi-functional WSUD systems in recycling and reusing of grey-water for potable water savings in the UAE.

m.mohamed@uaeu.ac.ae

Mobility and fractional composition of Cu compounds in chernozem calcic in the conditions of model experiment

Bauer Tatiana, Tatiana Minkina and **Svetlana Sushkova**
Southern Federal University, Russia

The present study is aimed at identifying the regularities in transformation processes of exogenic Cu compounds in calcic Chernozem of Rostov region (Russia). Parallel extractions were employed to study Cu mobile forms, using the following reagents: 1 N NH4OAC at pH 4.8 for extraction of the exchangeable forms; 1% EDTA in NH4OAC at pH 4.8 for the exchangeable and complex forms. 1 N HCl extracted specifically sorbed forms. The sum of the exchangeable, complex and specifically sorbed forms is weakly bound compounds. In order to study the interaction between metal and soil components, the fractional analysis by Tessier's method was made in soil samples contaminated with metal acetate salts. This procedure ensures the separation of five fractions of metal compounds: Exchangeable, bound to carbonates, bound to Fe, Al, and Mn (hydr)oxides, bound to organic matter and residual fraction. Metal concentration in solutions was determined by atomic-absorption spectroscopy. The Cu distribution in forms of compounds within the uncontaminated and contaminated soils is identical and can be presented according to the following order, mg kg-1: no metal addition: specifically sorbed (2.2±0.3) > complex (0.5±0.1) > exchangeable (0.3±0.01), the dose 300 mg kg-1 of metal: specifically sorbed (213.3±1.4) > complex (63.9±5.9) > exchangeable (107.6±11.7). Based upon a model experiment, it has been established that in non-contaminated soils the main Cu share is predominantly concentrated in crystalline litters of the primary and secondary minerals (38% of the total content). In contaminated soils, the metal are found to be in the fraction bound to the organic matter (32%).

bauertatyana@mail.ru