Consumption of rainwater harvesting in terms of water quality

ABSTRACT

Rainwater harvesting is seen as part of solution to avoid water shortage in the future as it offers a sufficient supply and more economical if compare to the conventional way. The scarcity of water supply is becoming a concern due to the growing population of human along with environment pollutions. Rainwater harvesting is considered the most accessible source which could be easily used for potable purposes both for household and commercial activities. Therefore, in this study, the physical, microbiological and chemical rainwater quality samples were analyzed using membrane filtration technique (ELE Paqualab 50), ICP-OES and Hach methods, to ensure the suitability of rainwater harvesting for domestic consumption. The study reveals that overall quality of the rainwater is quite satisfactory as per WHO and Malaysian standards, where the pH, turbidity, total dissolved solids, salinity, NO_3^- , SO_4^{2-} , Zn and Pb were still under the permissible limits. However, the microbiological parameters (total coliform, fecal coliform and E. coli) and chemical (Cr) were found exceeded the standards, due to poor hygienic practices of the harvesting system. It can be concluded that the rainwater harvesting is still safe to drink and can be a potential alternative source of water supply in the future.