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Analysis of rainwater for acceptability for drinking purposes

A.T.N.S. Gunatilake and N.J.G.J Bandara

Rainwater harvesting technology is becoming popular due to the introduction of modified techniques and the involvement of government and non-government organizations since it was realized that this technology is an optimum solution for stress on water demand. When considering harvested water for drinking purposes, it is necessary to pay attention to the quality of the collected water.

This case study was conducted to get an idea about the quality of collected rain water in order to assess its acceptability for drinking purposes. The study was conducted in the Kalutara District. A social survey was conducted to select suitable sampling points from 345 existing rainwater harvesting tanks within the area. After summarizing the collected data, ten sampling points were selected according to a criterion?? on a monthly basis for a period of six months. However the analysis was limited for a period of four months due to unavailability of water in the selected tanks. Therefore 38 samples were drawn and tested for basic chemical, physical and biological parameters against the Sri Lanka Standard Specification for Potable Water (SLS 614 Part 1 & 2). Odour, taste, turbidity, pH, alkalinity, free ammonia, count of *Escherichia coli* (*E.coli*) and Coliform organisms were taken into consideration. According to the test results, all samples were within the maximum permissible levels for the selected chemical and physical parameters. In addition 42 % of tested samples were within the maximum permissible level for potable water in biological parameters.

It is felt that the quality of the remaining 58 % of harvested water which had levels of *E.coli* and Coliform Organisms above the permissible level can be improved by cleaning and maintaining the roof, gutters, storing tank and filter devices of the tanks periodically and in an effective manner. It can be concluded from the study that provided the necessary cleaning is done rainwater harvesting is an effective, alternative way of meeting the demand for water.

nilanga@slsi.slt.lk 071 4480253