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# Status of Rainwater Harvesting in Kayts of Jaffna Peninsula in Northern Sri Lanka with Reference to Water Quality

**Nadaraja D.[1], Dayawansa P.N.[2*]**

*[1]Faculty of Graduate Studies, University of Colombo, Colombo 07, Sri Lanka*
*[2]Department of Zoology and Environment Sciences, University of Colombo, Colombo 03, Sri Lanka*
**nihalday@gmail.com*

## Abstract

Rainwater harvesting has been practiced in Kayts (Jaffna Peninsula) since 2016. A consumer preference study conducted in the area by employing a structured questionnaire survey revealed that 97% of the people did not use stored rainwater for drinking as they questioned the quality of water. Thus, the current study was an attempt to investigate into the quality of rainwater harvest in Kayts. It was hypothesised that the quality of rainwater harvested in tanks, varied with time depending on the filling time (rainy season) and consuming time (drought). Selected physical (colour, odour, taste), physicochemical (pH, conductivity, turbidity) and biological (total coliforms) parameters were determined during the rainy season (freshly filled rainwater), early dry season (few months after storage) and peak dry season (several months upon storage) in 2018. Change in colour, odour and taste were evident over time, however, they were within the desirable range of Sri Lanka Standards (SLS) and WHO standards. Turbidity (range: 0.23-1.96 NTU), pH (range: 7.5-8.4) and conductivity (range 68.7-129.6 µS) increased significantly (Kruskal Wallis test: Minitab 17 $p<0.05$) during the storage time. Total coliforms exceeded the Sri Lankan standard of 10 Cfu /100 ml in two harvest tanks (10 and 14 Cfu/ 100 ml) out of 30 tanks possibly due to contamination by bird excreta. In conclusion, the water quality parameters of securely stored rainwater met the SLS and WHO standards of potable water quality irrespective of the season of sampling. Current research suggests that rainwater in Kayts of Jaffna peninsula is in good quality to be used as drinking water when securely collected. The acceptability of rainwater for consumption was unsatisfactory among consumers due to baseless doubts about water quality.

***Keywords:*** Rainwater harvesting, Water quality, Jaffna Peninsula