

Heavy metal levels in water and sediments of Bathalagoda Reservoir, Sri Lanka

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Bathalagoda reservoir, a fresh water body located in the Kurunegala District of Sri Lanka is used by the residents in the area for irrigating paddy fields, drinking and bathing purposes and for culture-based fisheries. The present study was carried out to determine the selected heavy metal levels viz. lead, cadmium and copper in water and sediments of the reservoir to assess the extent of heavy metal pollution. Water and sediment samples were obtained from three locations of the reservoir namely Ibbagamuwa, Moragolla and Madihe- Mudunduwa during the period September 2007 – July 2009 and the heavy metal levels were determined by Atomic Absorption Spectrometry following standard procedures.

The results showed that lead, cadmium and copper levels in water ranged from not detectable level to $2 \mu\text{g L}^{-1}$, not detectable level to $3 \mu\text{g L}^{-1}$ and not detectable level to $3 \mu\text{g L}^{-1}$ respectively. Corresponding metal levels in the sediments (dry weight basis) ranged from not detectable level to $523 \mu\text{g g}^{-1}$, not detectable level to $0.1 \mu\text{g g}^{-1}$ and not detectable level to $26 \mu\text{g g}^{-1}$ respectively. Significant site specific variations or seasonal variations were not observed in relation to the heavy metal levels in water and sediments of the reservoir. The results revealed that the levels of lead, cadmium and copper in the reservoir water are far below the maximum permissible levels specified by the international regulatory authorities (World Health Organization and United States Environmental Protection Agency) for drinking water and water used for irrigation purposes.