# RELEASE OF SEDIMENT ACCUMULATED CADMIUM BY BACTERIA INTO *WEWA* (RESERVOIR) WATER IN NORTH CENTRAL PROVINCE

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Chronic Renal Failure (CRF) is an emerging health problem in Sri Lanka. Interest in CRF in Sri Lanka was further stimulated by the fact that for most of the cases reported from a main agricultural area in North Central Province (NCP). One of causative reasons turned out to be high levels of cadmium in soil and water, due to excessive use of chemical fertilizers and pesticides. Main source is TSP fertilizer that contain 23.5-71.7 mg Cd/kg as an impurity.

Release of Cadmium and other impurities, to all water sources i.e. irrigation water, ground water and potable water resources cause severe contamination. Cadmium levels in the sediments of the water reservoirs are critically high. It was reported that agrochemicals contaminated with cadmium impurities are the main source of Cadmium in paddy soils and irrigation water. Cadmium carried by runoff water, eventually enters into reservoirs and retained by sediments commonly in colloidal forms. It was also reported that a strain of microaerophilic *Sphingomonas* species (AB 2008) release colloidal cadmium into water $Cd^{2+}$.

In this study sediment samples collected from 6 reservoirs in a single cascade system, namely *Katiyawa, Meegalawa, Nallachchiya, Rajanganaya, Manel wewa* and *Pahala halmillawa* and another from *Anuradhapura* namely *Poonawa* were treated with *Sphingomonas* strain isolated from the same sediment samples and lechate collected and was tested for cadmium. *Poonawa* showed no cadmium in sediment. All *Katiyawa* cascade reservoirs contained 2.59 µg/kg to 46.67 µg/kg liter of cadmium in the leachate. It is concluded that bacteria *Sphingomonas* plays a major role in releasing sediment cadmium in to irrigation, ground and potable water systems.

**Key words:** Cadmium, Chronic renal failure, *Sphingomonas*