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# *ACCUMULATION STATUS OF MICROCYSTIN – LR (MC-LR) IN Ipomoea aquatica PLANT TISSUES*

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The majority of water bodies in Sri Lanka are contaminated with Microcystin-LR (MC-LR). MC-LR has acute and chronic hepatotoxic and nephrotoxic effects on animals and humans. The aim of this study was to investigate accumulation status of MC-LR in a selected leafy green, *Ipomoea aquatica* (Kangkong) in the laboratory and the field. Among various aquatic plants, *I. aquatica*, is the most preferable leafy green of Sri Lankan diet. Kangkong plants were exposed to fresh blooms of the genera *Microcystis* under hydroponic conditions in the laboratory. In the field study, plant tissue samples of *I. aquatica* were collected from Padaviya where MC-LR in water has been detected. Quantification of MC-LR was done using photodiode array - High Performance Liquid Chromatography method (PDA-HPLC). The mean concentration of MC-LR bioaccumulation in the samples of the laboratory study and the field study was 350.82±2.86 µg/kg and 132.86±0.26 µg/kg respectively. The evaluated mean human health risk via the consumption of *I. aquatica* grown in the laboratory and for the samples collected from the field was 0.06±0.01 µg/kg and 0.03±0.01 µg/kg of body weight per day. The values were stated beyond the Tolerable Daily Intake (TDI) of 0.04 µg/kg of body weight per day of MC-LR recommended by World Health Organization (WHO). Thus, the results of the present study indicated that MC-LR accumulate in Kangkong plants. Therefore, in order to prevent the risk of human exposure to MC-LR via the food chain awareness should be raised among the public to avoid the consumption of contaminated leafy greens. Moreover, regular monitoring of freshwater sources of Sri Lanka for the prevalence of MC-LR and other cyanotoxins is an essential step forward.

**Keywords:** *MC-LR; Ipomoea aquatica; bioaccumulation; Tolerable Daily Intake; human health risk*