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A PRELIMINARY STUDY ON HEAVY METAL ACCUMULATION IN SELECTED AQUACULTURE SYSTEMS IN SRI LANKA

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Accumulation of four heavy metals (Cu, Cd, Zn and Pb) in aquaculture sediments was studied with respect to systematically developed novel aquaculture sites from Batticaloa, and the findings were compared with an existing well established site from Chilaw.

The results indicate that heavy metals have the potential to accumulate in all selected sites. Buildup of Zn was significant in pond sediments compared to the other metals with the highest value of about 1200 ppb. This may be due to anthropogenic inputs of chemical substances such as minerals for shrimp growth. The gradual development in the accumulation of heavy metals with culture practices is evident by the increased levels of Cd at aquaculture facilities with continuous operation. However, availability of heavy metals for shrimps and surrounding environment depends on the chemistry of the sediment (for example pH, aerobic or anaerobic conditions). Pond preparation by means of heavy machinery and, discharge of water at harvesting are known to disturb the physico-chemical status of sediments. Unless care is taken, this would pose a major risk to animals as well as surrounding environment. Moreover, it is assumed that heavy metals other than Cu, Cd, Zn and Pb synergistically act in the aquaculture systems and surrounding environment. This may be attributed to the reported impaired quality of the products with chemical substances from some aquaculture producing countries.

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