

**Abstract No: MO-08**

## **Bioaccumulation potential of tributyltin in mollusks in some harbours in Sri Lanka**

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The Organotin compound Tributyltin (TBT) is widely used as an antifouling agent in ship paints, and is considered to be one of the strongest neurotoxic xenobiotic substances in the marine environment. It has been widely recognized that exposure to TBT causes the development of male characteristics known as 'imposex', in female mollusks. The present study was aimed to assess if there is a potential of accumulating TBT in the lipid containing body tissues in some molluscan species namely *Crassostrea madrasensis*, *Crassostrea cucullate*, *Perna viridis*, *Perna perna* and *Thais clavigera* inhabiting the Colombo, Dikkowita, Galle, Mirissa, Dewundara, Kirinda, Hambanthota and Trincomalee harbours in Sri Lanka. The TBT concentration (ng kg<sup>-1</sup>) and the lipid content (%) in lipid containing body tissues were determined in the above species (n=6). The highest concentration of TBT was recorded in *P. viridis* (234±3 ng kg<sup>-1</sup>) collected from the Dikkowita harbour, while the TBT concentration of this species ranged from 42±0.9 - 226±2.3 ng kg<sup>-1</sup> in the remaining seven harbours. The TBT concentration was also high in four other molluscan species namely *C. madrasensis* (74±3.7 - 181±4.1 ng kg<sup>-1</sup>), *P. perna* (35±2.4 - 126±6.7 ng kg<sup>-1</sup>), *C. cucullate* (12±8.1 - 116±6.5 ng kg<sup>-1</sup>) and *T. clavigera* (32±1.9 - 134±2.3 ng kg<sup>-1</sup>). The mean TBT concentration and the lipid content showed a significant positive correlation ( $P < 0.005$ ). Further, the TBT concentrations were found to be the highest in mollusks that had the highest lipid content in their body tissues: *C. madrasensis* ( $P = 0.004$ ), *C. cucullate* ( $P = 0.02$ ), *P. viridis* ( $P = 0.003$ ), *P. perna* ( $P = 0.001$ ) and *T. clavigera* ( $P = 0.001$ ). The highest TBT concentration and the lipid content were found both in *P. viridis* and *T. clavigera*. The results suggest that the bioaccumulation of TBT was high in the molluscan species that had the highest lipid content in their body tissues. There is a threat to the molluscan biodiversity in these harbours as a result of TBT exposure and bioaccumulation in the fat tissues.

**Keywords:** Bioaccumulation, harbours, lipid content, *Perna viridis*, Tributyltin

### **Acknowledgment**

This work was supported by the University of Sri Jayewardenepura under the research grant ASP/01/RE/SCI/2017/11.