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**Evidence of microplastics in *Sargassum sp.* in South coast of Sri Lanka**

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**Abstract**

The deposition of microplastic (MP) particles on marine macrophytes, such as macroalgae, is a possible entry point for MP into marine food webs. The present study was conducted to identify the MP associated with the most common seaweed species; *Sargassum sp.* grown on different tidal zones, i.e.: low-tidal zone (LTZ), mid-tidal zone (MTZ), and high-tidal zone (HTZ) on rocky shores in the Southern coast of Sri Lanka. The *Sargassum* samples (18/site) and water samples (3/site) were collected from all three tidal zones in Batheegama reef and Koggala reef. *Sargassum* blades were treated with 30% H<sub>2</sub>O<sub>2</sub> solution, filtered and examined microscopically to identify MPs. The occurrence of MP was 100% for all seaweed and water samples. MP abundance in *Sargassum* in Koggala reef (2.72±1.45 particles/cm<sup>2</sup>) was significantly higher than that of Batheegama reef (1.94±0.60 particles/cm<sup>2</sup>). However, the MP abundance of water samples was not significantly different between Koggala (144.67 ± 48.95 particles/L) and Batheegama (147.60 ± 99.01 particles/L). In Koggala, MP abundance in *Sargassum* of MTZ was significantly lower than that at HTZ and LTZ. In Batheegama, the highest MP abundance in *Sargassum* was seen at the MTZ while that at the LTZ was the lowest. Significant variations were seen in the abundance of various MP types that were examined from the three tidal zones in Koggala and Batheegama. However, MP fibers were the most predominant type in water samples. In both *Sargassum* samples and water samples, black was the most abundant colour of MP, and small (<0.25cm) fibers were the most prominent type. Additional investigation is required to pinpoint the precise source, type of polymer, and the true impact of the microplastics on the ecosystem of the rocky shore.

**Keywords:** Microplastic, Rocky shore. *Sargassum sp.*, Tidal zone

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