



CHARACTERIZATION AND QUANTIFICATION OF MICROPLASTICS IN SLIPPER-CUPPED OYSTER, *Crassostrea iredalei* (Faustino, 1932) FROM CAÑACAO BAY, CAVITE CITY, PHILIPPINES

Steve P. Obanan^{1,2*}, Elselear L. De Leon¹, Gabriel R. Salva¹,
Danica Kayla T. Santos¹, Daniel E. Segovia¹, and Raynar Joseph
Uybarreta¹

¹Department of Natural Sciences, College of Arts and Sciences,
University of the East, CM. Recto Ave., Sampaloc, Manila 1008

²School of Environmental Science and Management,
University of the Philippines, Los Baños, College, Laguna

*Corresponding author: steve.obanan@ue.edu.ph

ABSTRACT – Microplastics are plastic particles that measure less than 5mm and pollute the marine environment and aquaculture areas. Microplastics pose risk on human health due to their capacity to adsorb heavy metals and retention in various trophic levels. This research aims to characterize and quantify the microplastics present in slipper-cupped oyster (*Crassostrea iredalei*) in Cañacao Bay, Cavite City, Southern Luzon, Philippines. The oyster shell lengths and widths were measured using Vernier caliper. The total shell and meat weights were determined using an analytical balance. The extracted soft tissues of the samples were digested using 10% Potassium Hydroxide (KOH) for 24 hours at 60°C. The solutions were filtered using Whatman Grade 1 Quantitative Filter Paper (pore size: 11 micron). Microplastics were photographed, classified, and characterized using a stereomicroscope. Eight hundred twenty-seven (827) microplastics were collected and classified based on their appearance and characteristics; 817 were classified as microfibrils and 10 were microplastic fragments. Microbeads and microfoams were not found in the collected samples. No significant relationship between the shell length, width and weights with the number of microplastic present ($p > 0.05$). Results indicate that microplastics can be assimilated by the oyster regardless of their sizes and weights. This study confirmed the presence of microplastics in Philippine oyster, *C. iredalei* and important management strategies are recommended to reduce or prevent the microplastic inputs in the marine ecosystem and trophic levels.

Keywords: *Crassostrea iredalei*, microplastics, oyster



JOURNAL OF NATURE STUDIES
(formerly Nature's Bulletin)
Online ISSN: 2244-5226

To cite this paper: Obanan, S.P., De Leon, E.L., Salva, G.R., Santos, D.K.T., Segovia, D.E. & Uybarreta, R.J. 2020. Characterization and Quantification of Microplastics in Slipper-Cupped Oyster *Crassostrea iredalei* (Faustino, 1932) from Cañacao Bay, Cavite City, Philippines. *Journal of Nature Studies*. 19(2), 10-24.