Journal of the Serbian Chemical Society
JSCS@tmf.bg.ac.rs • www.shd.org.rs/JSCS
J. Serb. Chem. Soc. 90 (6) S227–S228 (2025) *Supplementary material*

SUPPLEMENTARY MATERIAL TO

Microplastic accumulation and reduction in shellfish (*Polymesoda bengalensis*) using NaCl solution

DESWATI DESWATI[1]*, EMRIADI EMRIADI[1], SELFI MONICA AURA[1], WIYA ELSA FITRI[2], SUPARNO SUPARNO[3] and ADEWIRLI PUTRA[4]

[1]Department of Chemistry, Faculty of Mathematics and Natural Science andalas University, Padang, 25163, Indonesia, [2]Department of Public Health, Syedza Saintika University, Padang, 25132, Indonesia, [3]Departement of Fisheries Resources Utilization, Faculty of Fisheries and Marine Sciences, Bung Hatta University, Padang, 25133, Indonesia and [4]Department of Medical Laboratory Technology, Syedza Saintika University, Padang, 25132, Indonesia

J. Serb. Chem. Soc. 90 (6) (2025) 803–821

SAMPLING AND SAMPLE COLLECTION SITE SELECTION

The details about sample collection are given in the Supplementary material to this paper.

Sampling activities were carried out at three different locations, namely: 1) Batang Arau River Estuary, Padang City, West Sumatra, Indonesia (0° 57'58.4" S; 100° 21'08.7" E); 2) Bungo Pasang River Estuary, Padang City, West Sumatra, Indonesia (0° 51'54.7" S; 100° 20'02.7" E); 3) North Punggasan River Estuary, South Pesisir Regency, West Sumatra, Indonesia (1° 53'04.5" S; 100° 50'37.6" E), shown in Fig 1. Sediment samples were taken at the same place as the shellfish samples using a shovel and homogenized. Next, please put it in a glass bottle, store it in a cool box and take it to the laboratory.[16]

Description of sampling site selection: (1) Batang Arau River Estuary, this estuary is situated in a densely populated area and serves as a hub for tourism and fishing activities, including a port and fish auction center. High levels of activities, such as water-based tourism and household waste, contribute significantly to plastic waste, making it a location with high potential for microplastic accumulation. Consequently, Batang Arau is a key focus in contamination analysis; (2) Bungo Pasang River Estuary, this area experiences moderate anthropogenic activity, surrounded by residential neighborhoods and small-scale industries. Although the potential for microplastic contamination exists, it is lower than in Batang Arau. Bungo Pasang was selected to assess microplastic accumulation in an area with moderate human activity; (3) North Punggasan River Estuary, located along the coast in a region with minimal human activity, North Punggasan is far from industrial areas and tourist centers. Microplastic levels are expected to be low; however, it is included as a comparison site to assess possible contamination from other areas through ocean currents.

* Corresponding author. E-mail: deswati@sci.unand.ac.id

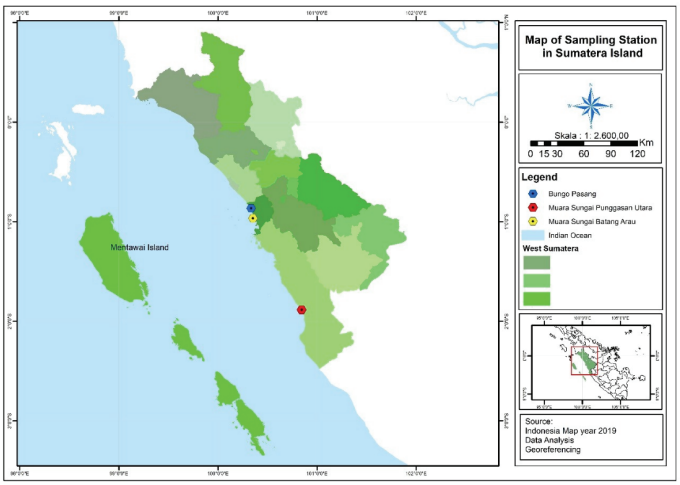

Fig S-1. Research sampling location in the waters of West Sumatra, Indonesia.[1]

Sampling period

Samples were collected during periods of peak human activity, in June of 2023, such as holiday seasons or market days, to provide an accurate assessment of MP accumulation based on activity intensity. This approach aids in understanding contamination variation across locations relative to time and human activity levels.

Sediment sampling

Sediment samples were collected from three locations (Batang Arau River Estuary, Bungo Pasang and North Punggasan) within a 1×1 meter area at each site. Sediment was taken from multiple points within this area down to a depth of 5 cm using a metal shovel, then homogenized in the field to ensure an even distribution of microplastics. Each site was selected based on the level of human activity and a total of 100 g of homogenized sediment was collected from each location to provide a representative analysis of MP contamination.

REFERENCEES

1. Indonesia Geospasial, Region of West Sumatra, Indonesia, *Indonesia Geospasial: Sistem Informasi Geografi & Penginderaan Jauh*, https://www.indonesia-geospasial.com/ (accessed: April 23, 2023).