













SUPPLEMENTARY MATERIAL

Depuration of mussels (*Pilsbryconcha exilis*) from microplastics using banana peel adsorbents in coastal areas of Indonesia

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Table S1. Microplastics (MPs) concentration and depuration time in various species

Species	Amount of MPs		Depuration time	Area	Source
	before depuration	after depuration			
<i>Crassostrea virginica</i>	oysters were subjected to a concentration of 5000 MPs·dm ⁻³ , which included purple polyethylene fibers, green nylon fragments, and micronised crumb rubber	after 96 h and the conditional uptake clearance rate constant value was estimated to be 0.0077 cm ³ ·g ⁻¹ ·h ⁻¹	minimum 44 h	along the South Carolina coast (US)	Weinstein, Ertel and Gray (2022)
Adult individuals of <i>Pomacentrus amboinensis</i>	from 10ERC to 100ERC	the rates at which MPs were eliminated ranged from 0.13 MPs·h ⁻¹ (PET: 100ERC) to 0.52 MPs·h ⁻¹ (PP: ERC). These rates were noticeably affected by the type and concentration of MPs provided, as indicated by Welch's ANOVA test with a significant result ($W(5, 72.49) = 41.48, p < 0.0001$)]	the most significant change in body burden over time occurred within 8 h	waters of the Great Barrier Reef	Santana <i>et al.</i> (2021)
Wild and farmed individuals of <i>Perna perna</i>	a range of 31.2 ±17.8 MPs per mussel (with a size of at least 0.45 µm) were found, and all 40 mussels examined contained MPs	the process of depuration notably decreased the presence of MPs in both wild mussels (by 46.79%) and farmed mussels (by 28.95%).	93 h depuration significantly reduced MPs (ANOVA, $p = 0.02$) significant ($p > 0.05$)	Guanabara Bay (Southwestern Atlantic)	Birnstiel, Soares-Gomes and Gama da, (2019)
<i>Mytilus edulis</i>	the absence of a significant disparity in bead counts during mussels' exposure and depuration phases suggests that there was minimal to no expulsion (egestion) of the beads	The depuration of microplastics was found to be ineffective within the 2 h period, as no significant egestion of polystyrene beads was observed	2 h depuration	long lines on a mussel farm in Limfjorden near Sallingund (Denmark)	Rist <i>et al.</i> (2019)
<i>Asaphis detlorata</i>	<i>Asaphis detlorata</i> was found to have a range of 1 to 19 MPs per shellfish, with an average value of 8.1 ±5.7 MPs per shellfish	the effectiveness of depuration on the third day was measured at 91.76%, while on the fourth day it increased to 93%; this indicates that the longer the duration of depuration, the higher its effectiveness becomes	the effective depuration time to reduce the MPs content in <i>Asaphis detlorata</i> was 3 and 4 days	Takalar Regency	Saputri <i>et al.</i> (2020)

Species	Amount of MPs		Depuration time	Area	Source
	before depuration	after depuration			
<i>Crassostrea gigas</i>	the concentration of fluorescent orange polystyrene particles was 60 particles per dm ³ , with known sizes of 100, 250, and 500 µm	after 24 h of depuration, the average removal rate was 19.4 ±1.1%; after 48 h of depuration, the average removal rate remained consistent at 19.4 ±2%; the depuration process extended to 72 h, resulting in an average removal rate of 12.9 ±2%	24, 48 and 72 h	The San Teodoro lagoon (Italy)	Graham (2019)
<i>Mytilus galloprovincialis</i>	MPs of 45 µm and 4.5 µm	MPs 45 µm decreased 40% and MPs 4.5 µm decreased 50–60%	1 day	Basque Country (Bay of Biscay, Spain)	Hellfeld von, <i>et al.</i> (2022)

Explanations: *ERC* = environmentally relevant concentrations, PET = polyethylene terephthalate, PP = polypropylene.

Source: own elaboration based on the literature.