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SUPPLEMENTARY MATERIAL

Size and type affect microplastic entrapment by freshwater macrophytes under vertical and lateral deposition

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Key words: *ex situ* experiment; polyethylene; polyamide; *Hydrilla verticillata*; *Mayaca fluviatilis*.

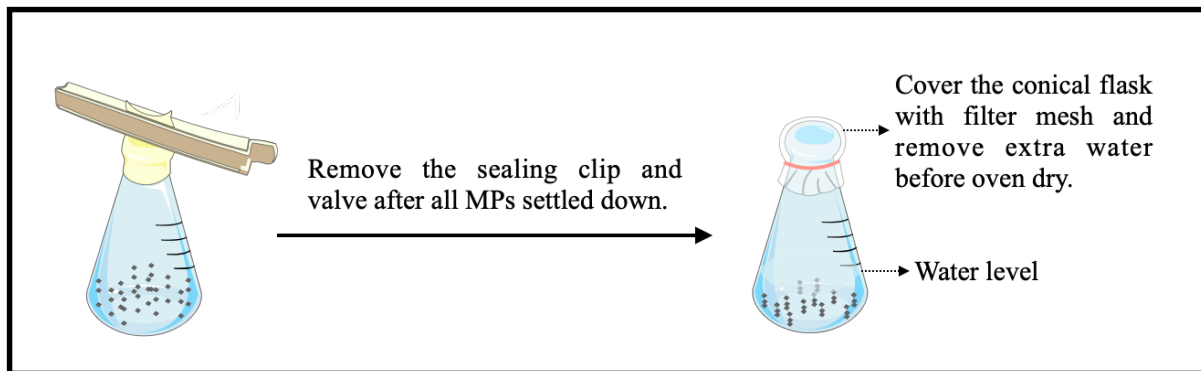


Fig. S1. Vertical experimental process for obtaining the uncaptured microplastics weight.

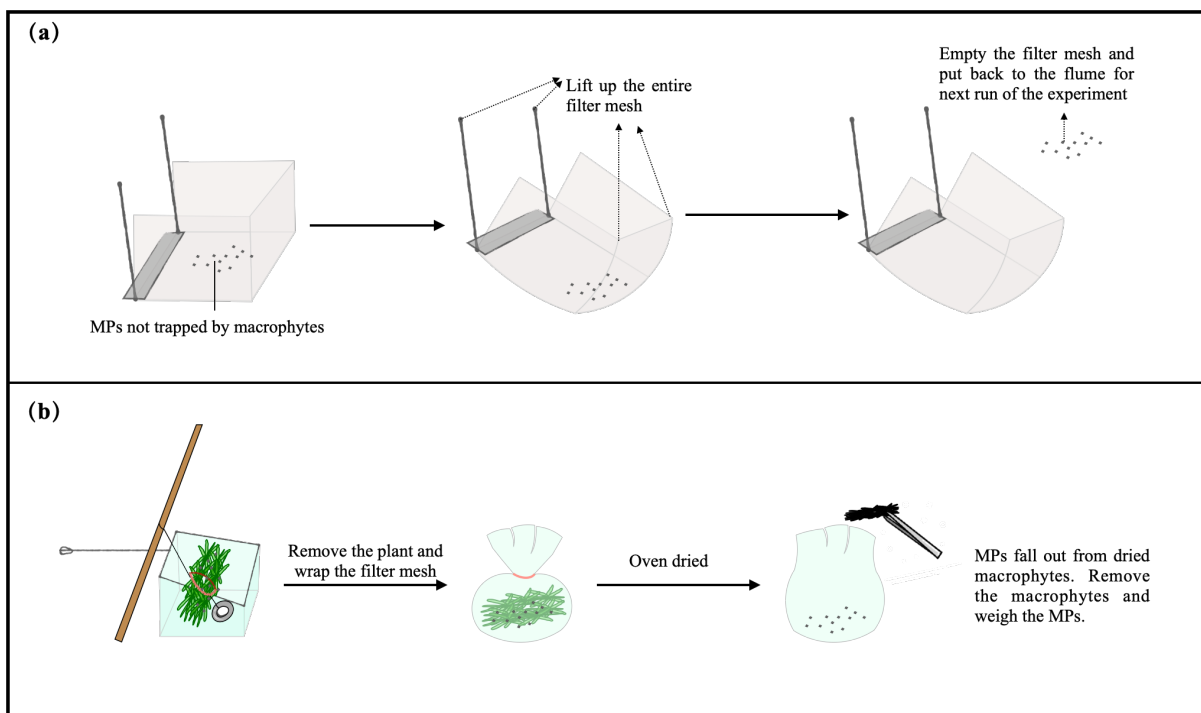


Fig. S2. Horizontal experimental process after each run of the macrophytes capturing microplastics. **a)** Filter mesh placed in the flume to retrieve the uncaptured microplastics to avoid the contamination for later runs of the experiment. **b)** Process of removing captured microplastics from macrophytes.

Tab. S1. *Post-hoc* pairwise comparison of the retained MPs per dry weight ratio (g) of different experimental treatment groups in horizontal and vertical experiments.

Variables	Species effects	Horizontal p.adj-value	Vertical p.adj-value
Retained MPs per dry weight ratio (g)	Control - <i>Hydrilla verticillata</i>	<0.0001*	0.002*
	Control - <i>Mayaca fluviatilis</i>	<0.0001*	<0.0001*
	<i>Hydrilla verticillata</i> - <i>Mayaca fluviatilis</i>	0.2926	0.002*

Tab. S2. *Post-hoc* pair wise comparison of the retained MPs per dry weight ratio (g) of the experimental macrophytes species *M. fluviatilis* and *H. verticillata* between microplastics groups in both horizontal and vertical experiment.

Variables	Species	MPs effects	Horizontal p-value	Vertical p-value
Retained MPs per dry weight ratio (g)	<i>M. fluviatilis</i>	800-1000 µm PA×600-800 µm PA	<0.0001*	0.001**
		600-800 µm PET×600-800 µm PA	<0.0001*	<0.0001*
		600-800 µm PET×800-1000 µm PA	<0.0001*	0.048*
		800-1000 µm PET×600-800 µm PA	<0.0001*	0.005**
		800-1000 µm PET×800-1000 µm PA	<0.0001*	0.139
		800-1000 µm PET×600-800 µm PET	0.006**	0.009**
	<i>H. verticillata</i>	800-1000 µm PA×600-800 µm PA	<0.0001*	0.615
		600-800 µm PET×600-800 µm PA	<0.0001*	<0.0001*
		600-800 µm PET×800-1000 µm PA	<0.0001*	<0.0001*
		800-1000 µm PET×600-800 µm PA	<0.0001*	<0.0001*
		800-1000 µm PET×800-1000 µm PA	<0.0001*	<0.0001*
		800-1000 µm PET×600-800 µm PET	0.011*	0.011*

Tab. S3. ANOVA of the retained MPs per dry weight ratio (g) of the experimental macrophytes species *M. fluviatilis* and *H. verticillata* affected by the size, type, and the interaction of size and type of microplastics groups in vertical experiment.

	Variables	Df	F value	p-value
<i>M. fluviatilis</i>	Size	1	0.194	0.667
	Type	1	20.165	<0.001*
	Size: type	1	45.777	<0.001*
<i>H. verticillata</i>	Size	1	12.73	0.004 *
	Type	1	353.88	<0.001*
	Size: type	1	10.13	0.008 *