

### Supplementary Material

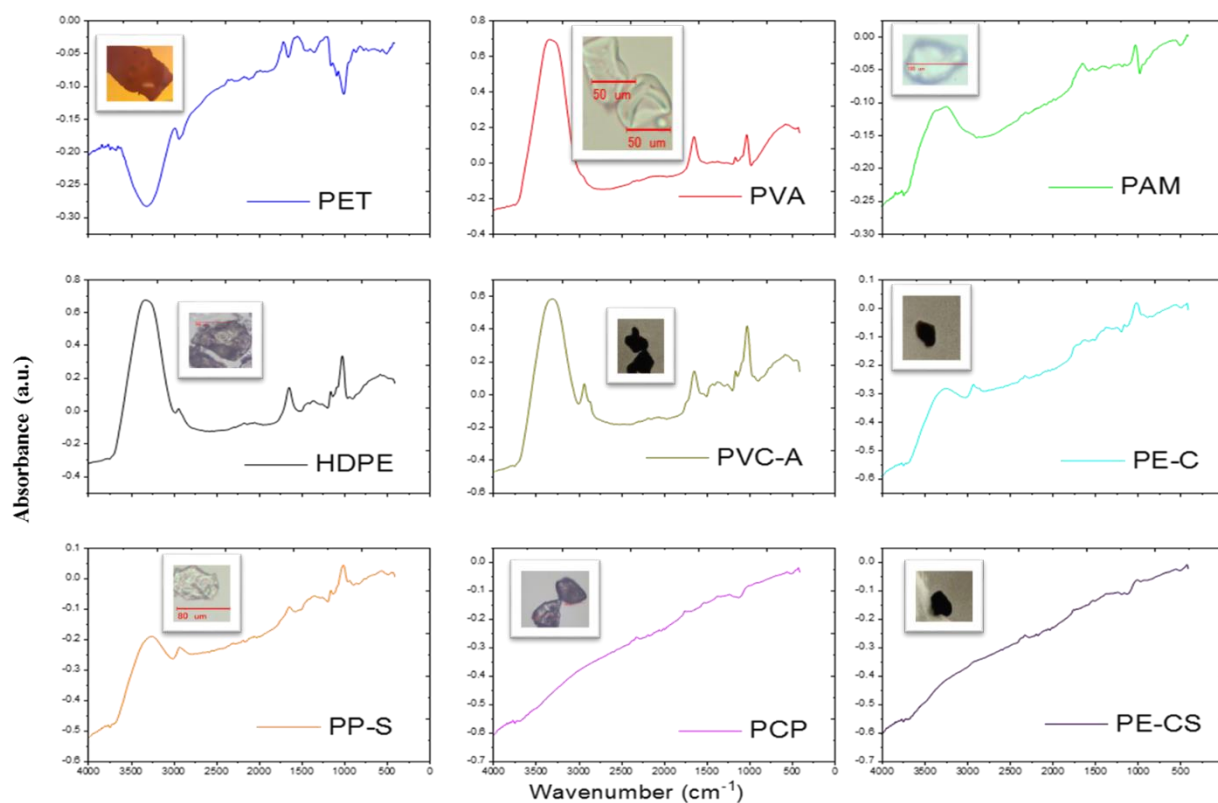


Figure S1. Some photographs of the different MPs identified in the garri samples.

Table S1. Quantity of microparticles and microplastics in the garri samples

Samples	Microparticles					Microplastics				
	Test 1	Test 2	Test 3	MEAN	SDV	Test 1	Test 2	Test 3	MEAN	SDV
S1	242	196	210	216	23.58	188	191	146	175	25.16
S2	27	32	39	32.67	6.023	13	6	20	13	7
S3	44	63	36	47.67	13.87	30	42	21	31	10.54
S4	4	7	3	4.67	2.08	2	4	0	2	2
S5	31	26	52	36.33	13.8	28	16	24	22.67	6.11
CONTROL 1	-	-	-	-	-	-	-	-	-	-
CONTROL 2	-	-	-	3	1	-	-	-	-	-

Water utilized in particle extraction (procedural blank, CONTROL 1) and water left open in the experimental lab for the duration of extraction (air blank, CONTROL 2) were employed as contamination controls.

Table S2. Shapes of microplastics in the garri sample

Samples	Fragments					Rod/line					Film				
	Test 1	Test 2	Test 3	MEAN	SDV	Test 1	Test 2	Test 3	MEAN	SDV	Test 1	Test 2	Test 3	MEAN	SDV
S1	180	189	140	169.67	26.08	8	2	6	5.33	3.06	0	0	0	0	0
S2	13	6	18	13	6	0	0	0	0	0	0	0	2	0.67	1.15
S3	28	42	16	28.67	13.01	2	0	5	2.33	2.52	0	0	0	0	0
S4	2	4	0	2	2	0	0	0	0	0	0	0	0	0	0
S5	24	16	23	21	4.36	4	0	1	1.67	2.08	0	0	0	0	0

**Table S3.** Summary of data for all garri samples

<b>Sample 1- Garri from open market</b>						
	Test 1	Test 2	Test 3	mean	SDV	
	242	196	210	216	23.57965	Mpa
	188	191	146	175	25.15949	MPs
	180	189	140	169.6667	26.0832	Fragment
	8	2	6	5.333333	3.05505	Line/rod
MP type	Test 1	Test 2	Test 3	mean	SDV	CV %
PET	82	106	61	83	22.51666	27.12851
PAM	22	13	20	18.33333	4.725816	25.77718
PVA	14	8	21	14.33333	6.506407	45.39354
HDPE	38	42	29	36.33333	6.658328	18.32567
PVC-A	32	22	15	23	8.544004	37.14784
<b>Sample 2- Garri from Abuja supermarket</b>						
	Test 1	Test 2	Test 3	mean	SDV	
	27	32	39	32.66667	6.027714	Mpa
	13	6	20	13	7	MPs
	13	6	18	12.33333	6.027714	Fragment
	0	0	2	0.666667	1.154701	Film
MP type	Test 1	Test 2	Test 3	mean	SDV	CV %
PET	2	0	4	2	2	100
PP-S	4	2	6	4	2	50
PVA	0	1	2	1	1	100
HDPE	3	2	2	2.333333	0.57735	24.74358
PVC-A	2	0	3	1.666667	1.527525	91.65151
PE-C	2	1	3	2	1	50
<b>Sample 3- White Garri from Shinokubo, Japan</b>						
	Test 1	Test 2	Test 3	mean	SDV	
	44	63	36	47.66667	13.86843	Mpa
	30	42	21	31	10.53565	MPs
	28	42	16	28.66667	13.01281	Fragment
	2	0	5	2.333333	2.516611	Line/rod
MP type	Test 1	Test 2	Test 3	mean	SDV	CV %
PET	0	4	4	2.666667	2.309401	86.60254
PP-S	4	5	2	3.666667	1.527525	41.65978
PVA	0	2	0	0.666667	1.154701	173.2051
HDPE	3	4	1	2.666667	1.527525	57.2822
PVC-A	6	7	3	5.333333	2.081666	39.03124
PE-C	6	5	4	5	1	20
PCP	7	7	4	6	1.732051	28.86751
PE-CS	4	8	3	5	2.645751	52.91503
<b>Sample 4- White Garri from Shinjuku, Japan</b>						
	Test 1	Test 2	Test 3	mean	SDV	
	4	7	3	4.666667	2.081666	Mpa
	2	4	0	2	2	MPs
	2	4	0	2	2	Fragment
	0	0	0	0	0	Line/rod
MP type	Test 1	Test 2	Test 3	mean	SDV	CV %
PCP	1	3	0	1.333333	1.527525	114.5644
PE-CS	1	1	0	0.666667	0.57735	86.60254
<b>Sample 5- Yellow Garri from Shinjuku, Japan</b>						
	Test 1	Test 2	Test 3	mean	SDV	
	31	26	52	36.33333	13.79613	Mpa
	28	16	24	22.66667	6.110101	MPs
	24	16	23	21	4.358899	Fragment
	4	0	1	1.666667	2.081666	Line/rod

**Table S3.** *Continued*

MP type	Test 1	Test 2	Test 3	mean	SDV	CV %
PE-CS	14	2	6	7.333333	6.110101	83.31956
PCP	10	10	4	8	3.464102	43.30127
PP-S	2	3	9	4.666667	3.785939	81.12726
HDPE	0	1	2	1	1	100
PVC-A	2	0	3	1.666667	1.527525	91.65151

MPa- Microparticles; MPs-Microplastics; SDV-Standard deviation.

**Table S4.** Mean quantities of different MPs in garri samples

	S1	S2	S3	S4	S5	MEAN
PET	83	2	2.67	0	0	17.53
PAM	18.33	0	0	0	0	3.67
PVA	14.33	1	0.67	0	0	3.2
HDPE	36.33	2.33	2.67	0	1	8.47
PVC-A	23	1.67	5.33	0	1.667	6.33
PP-S	0	4	3.67	0	4.67	2.47
PE-C	0	2	5	0	0	1.4
PCP	0	0	6	1.33	7.33	2.93
PE-CS	0	0	5	0.67	8	2.73

**Table S5.** Polymeric risk index for MPs

	S1	S2	S3	S4	S5
PET	1.89	0.62	0.34	0	0
PAM	5.24	0	0	0	0
HDPE	2.28	1.97	0.95	0	0.49
PVC-A	914.35	891.92	1196.90	0	511.55
PP-S	0	0.31	0.12	0	0.21
PE-C	0	1.69	1.77	0	0
PE-CS	0	0	1.77	3.67	3.88
Overall	12.00	3.55	2.29	3.67	3.75

**Table S6.** PTEs concentration in mg/g

<b>Sample 1</b>	<b>Test 1</b>	<b>Test 2</b>	<b>Test 3</b>	<b>MEAN</b>	<b>SDV</b>
Cr	0.1	0.1	0	0.066667	0.057735
Mn	0	0.1	0	0.033333	0.057735
Fe	4.2	6.5	1.5	4.066667	2.502665
Co	0.2	0.2	0.1	0.166667	0.057735
Ni	0.6	2.4	0.2	1.066667	1.171893
Cu	0.3	1.5	0.3	0.7	0.69282
Zn	0.2	1.1	0.1	0.466667	0.550757
<b>Sample 2</b>					
Cr	0.1	0	0.1	0.066667	0.057735
Mn	0.1	0	0.1	0.066667	0.057735
Fe	7.2	2.1	3.3	4.2	2.666458
Co	0.1	0.1	0.3	0.166667	0.11547
Ni	0.6	0.1	2.4	1.033333	1.209683
Cu	1	0.2	0.8	0.666667	0.416333
Zn	0.5	0.1	0.8	0.466667	0.351188
<b>Sample 3</b>					
Cr	0.1	0	0	0.033333	0.057735
Mn	0	0	0	0	0
Fe	0.5	0.3	1.4	0.733333	0.585947
Co	0	0	0	0	0
Ni	0.4	0	0.3	0.233333	0.208167
Cu	0.5	0	0.1	0.2	0.264575
Zn	0.2	0	0.2	0.133333	0.11547
<b>Sample 4</b>					
Cr	0	0	0.1	0.033333	0.057735
Mn	0	0	0	0	0
Fe	2.4	0.8	8.4	3.866667	4.006661
Co	0.2	0.3	1.2	0.566667	0.550757
Ni	1.2	0.6	1.7	1.166667	0.550757
Cu	0.6	0.4	0.7	0.566667	0.152753
Zn	0.4	0.2	0.7	0.433333	0.251661
<b>Sample 5</b>					
Cr	0	0	0	0	0
Mn	0	0	0	0	0
Fe	15.1	1.1	0.7	5.633333	8.200813
Co	0.2	0.2	0.1	0.166667	0.057735
Ni	1.1	0.1	0.5	0.566667	0.503322
Cu	4.2	0.2	0.2	1.533333	2.309401
Zn	1.6	0.2	0.1	0.633333	0.83865

**Table S7.** Correlation matrix for PTEs and MPs

	Cr	Mn	Fe	Co	Ni	Cu	Zn	PET	PAM	PVA	HDPE	PVC-A	PP-S	PE-C	PCP	PE-CS	MP-total
Cr	1.000																
Mn	0.802	1.000															
Fe	-0.177	0.212	1.000														
Co	-0.066	-0.186	0.371	1.000													
Ni	0.540	0.486	0.525	0.710	1.000												
Cu	-0.550	-0.095	0.868	0.054	0.038	1.000											
Zn	-0.208	0.185	0.999	0.337	0.485	0.891	1.000										
PET	0.551	0.263	0.089	-0.147	0.341	-0.060	0.098	1.000									
PAM	0.535	0.250	0.114	-0.124	0.356	-0.038	0.123	0.999	1.000								
PVA	0.581	0.302	0.084	-0.163	0.349	-0.074	0.092	0.999	0.998	1.000							
HDPE	0.559	0.279	0.076	-0.184	0.319	-0.065	0.086	0.999	0.998	0.999	1.000						
PVC-A	0.523	0.215	-0.049	-0.296	0.177	-0.128	-0.034	0.984	0.979	0.983	0.988	1.000					
PP-S	-0.411	0.074	0.009	-0.619	-0.660	0.339	0.030	-0.594	-0.605	-0.580	-0.566	-0.508	1.000				
PE-C	0.082	-0.025	-0.877	-0.629	-0.705	-0.653	-0.871	-0.328	-0.357	-0.312	-0.302	-0.172	0.454	1.000			
PCP	-0.881	-0.706	-0.136	-0.393	-0.868	0.359	-0.093	-0.473	-0.471	-0.494	-0.464	-0.367	0.631	0.310	1.000		
PE-CS	-0.889	-0.635	0.029	-0.397	-0.807	0.513	0.073	-0.428	-0.423	-0.449	-0.419	-0.339	0.667	0.186	0.984	1.000	
MP-total	0.488	0.214	0.044	-0.262	0.214	-0.039	0.060	0.991	0.988	0.989	0.993	0.995	-0.506	-0.256	-0.362	-0.319	1.000