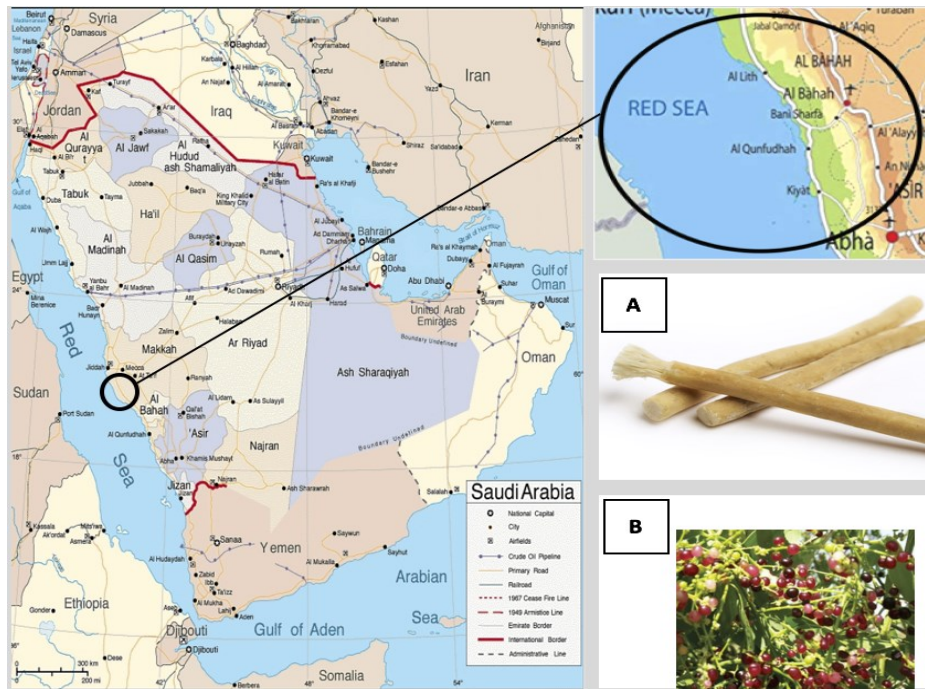


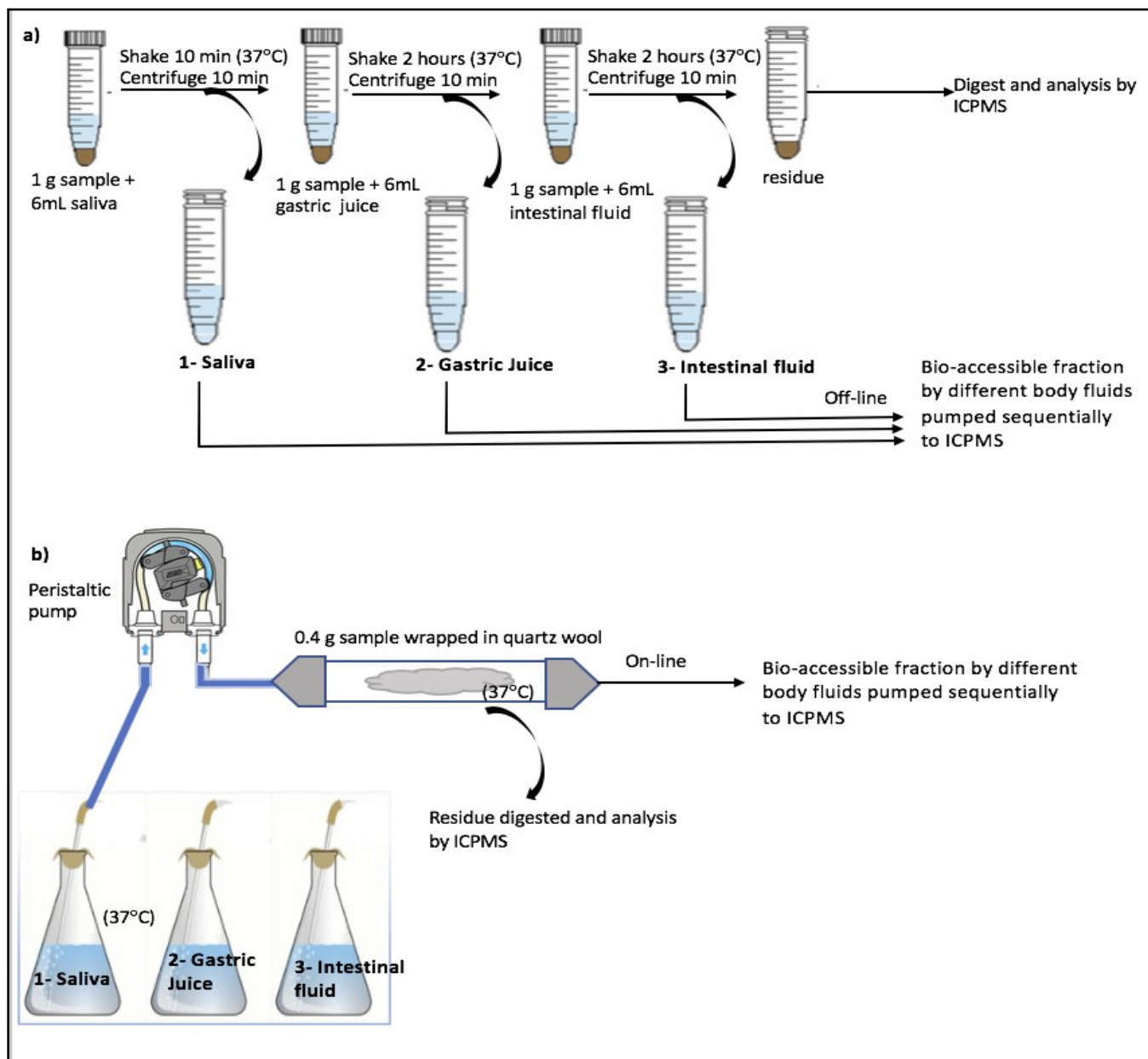
**Supplementary material for Pragmatic method based on on-line leaching and inductively coupled plasma mass spectrometry for risk assessment of the impact of short-term pollution**

**Table S1.** Amount (kg) of natural toothbrush that can be consumed daily corresponding to the PTDI level of elements based on their bio-accessible concentration

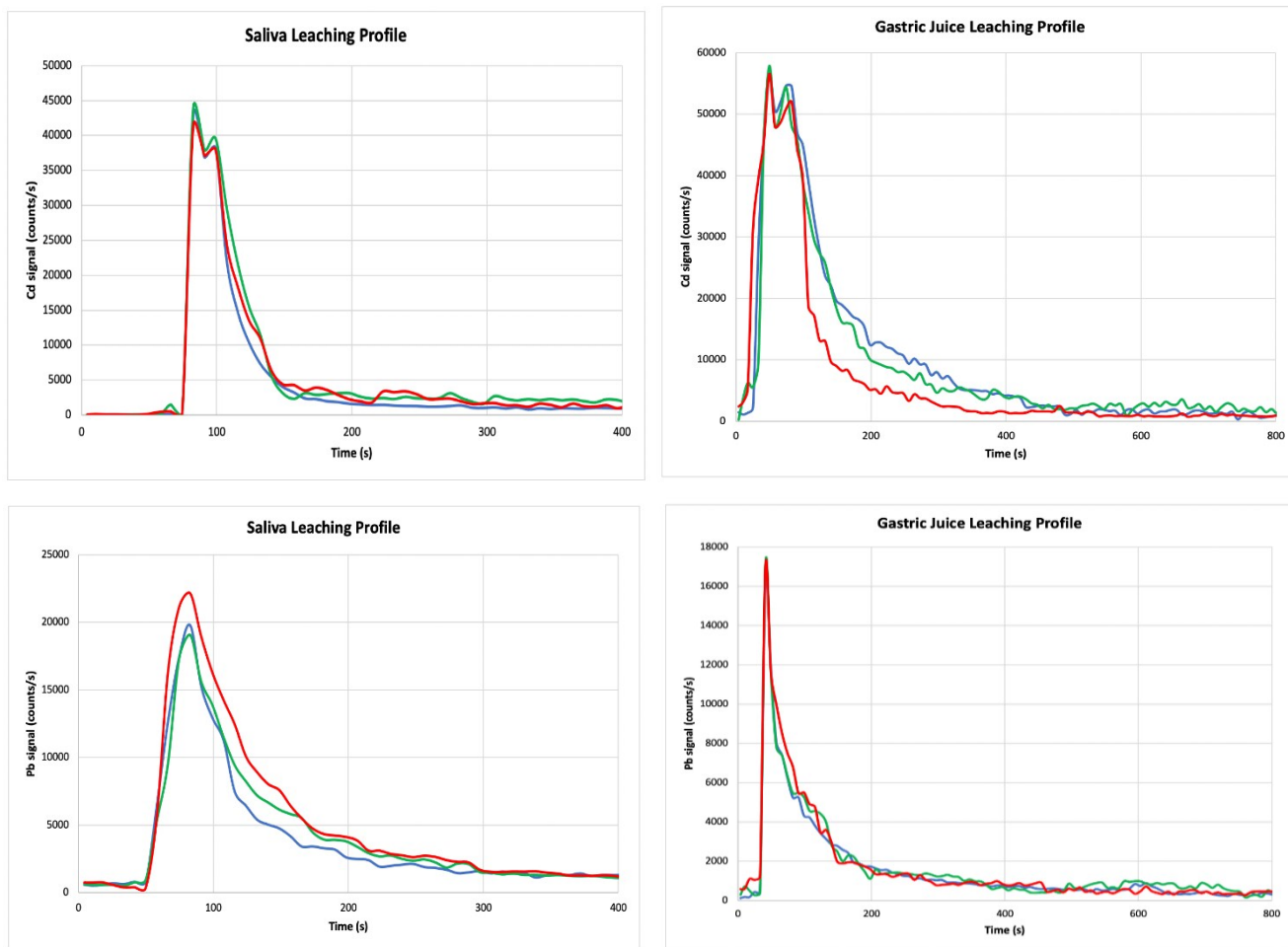
Element	Unpolluted miswak		Polluted miswak		Miswak fruits	
	Adult	Child	Adult	Child	Adult	Child
Cr	8	2	8	2	40	9
Fe	0.4	0.08	0.22	0.1	0.3	0.1
Ni	203	44	208	44	582	125
Cu	6	1	5	1	1	0.23
Zn	8	2	1	0.3	1.3	0.3
As	16	3	10	2	10	2.2
Cd	37	8	16	3	26	5
Pb	70	15	82	18	40	8.5



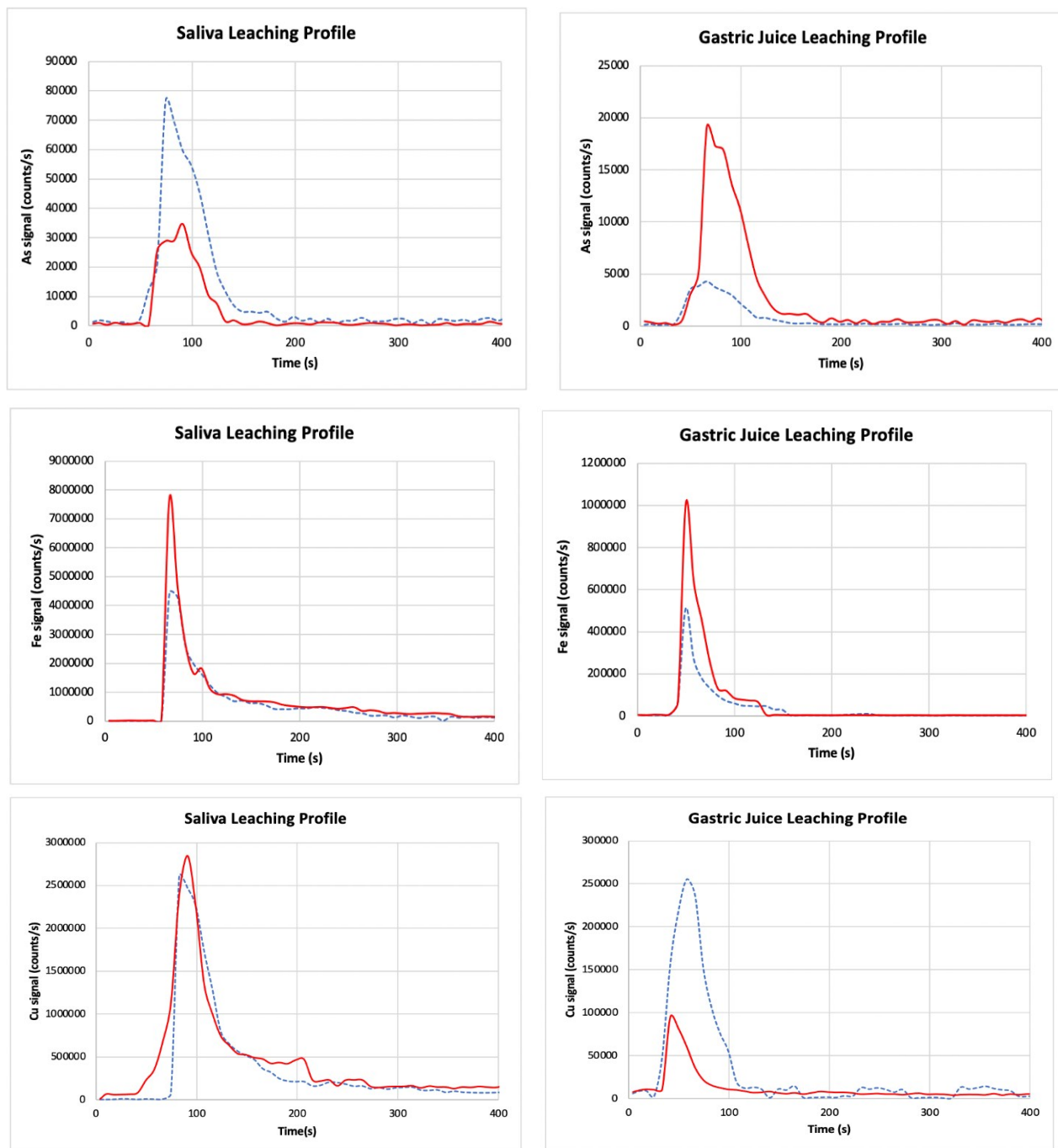
**Figure S1.** Map of Saudi Arabia showing the sample collection site, with photographs of a miswak brush (A) and fruits on a miswak tree (B).



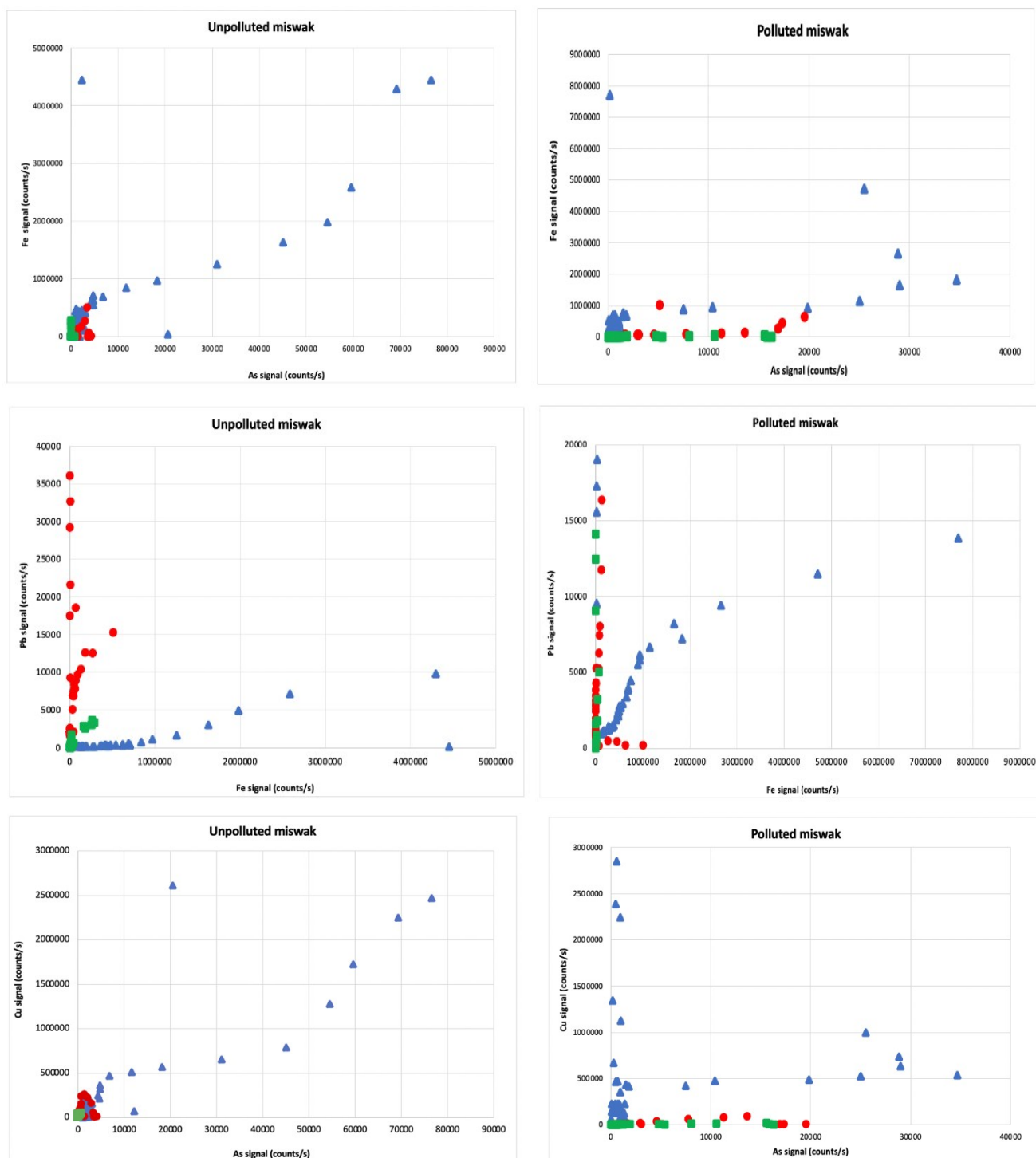
**Figure S2.** Schematic representation of in vitro bio-accessibility assessment by: a) batch method and b) on-line leaching method.



**Figure S3.** Triplicate temporal profiles obtained during on-line leaching of polluted miswak while continuously monitoring the release of Cd (top) and Pb (bottom) by ICPMS.



**Figure S4.** Real-time temporal profiles obtained by ICPMS for As, Fe and Cu during on-line leaching with artificial saliva and gastric juice for unpolluted miswak (dashed blue line) and polluted miswak (full red line)



**Figure S5.** Correlation between the temporal profiles of some elements during on-line leaching with artificial saliva (blue triangles), gastric juice (red circles) and intestinal fluid (green squares) in unpolluted miswak (left) and polluted miswak (right).