

Electronic Supplementary Material (ESI) for Journal of Analytical Atomic Spectrometry. This journal is © The Royal Society of Chemistry 2017

### Supplementary Information

Table S1 Typical uncertainties for the individual Y measurements.

River water

Symbol	Value	Standard uncertainty	Unit	Rel. uncertainty	Type	
Major contributions to uncertainty						
$R$	1.2634	0.0015	----	0.14 %	A	10
$\gamma$	0.9998	0.0000	----	0.00 %	A	10
$R'$	0.5649	0.0015	----	0.45 %	A	10
$\gamma'$	0.9998	0.0000	----	0.00 %	A	10
$R_x$	0.2368	0.0000	----	0.00 %	A	10
$\gamma_x$	1.0000	0.0000	----	0.00 %	A	10
$R_z$	0.2368	0.0005	----	0.15 %	A	10
$\gamma_z$	0.9998	0.0000	----	0.00 %	A	10
$D$	1.0000	0.0033	----	0.33 %	A	3
$B$	0.0000	0.0000	mg / kg	0.00 %	A	3
Secondary contributions to uncertainty						
$C_z$	0.2589	0.0008	mg / kg	0.30 %	B	Japanese calibration service
$R_y$	4590.0703	1853.8715	----	0.00 %	B	
$\gamma_y$	1.0000	0.0000	----	0.00 %	B	
$m_x$	1.9999	0.0002	g	0.01 %	B	Balance linearity
$m_y$	0.1000	0.0002	g	0.20 %	B	Balance linearity
$m'_y$	0.9885	0.0002	g	0.02 %	B	Balance linearity
$m_z$	0.9912	0.0002	g	0.02 %	B	Balance linearity
$\sum \gamma_{xi} \cdot R_{xi}$	1.2368	0.0000	----	0.00 %	B	
$\sum \gamma_{zi} \cdot R_{zi}$	1.2368	0.0000	----	0.00 %	B	
$C_x$	0.00415	ng / g				
$u(C_x)$	0.00003	ng / g				
$U$	0.00006	ng / g				
$U (\%)$	1.4	%				

Plant sample

Symbol	Value	Standard uncertainty	Unit	Rel. uncertainty	Type	
Major contributions to uncertainty						
$R$	0.4617	0.0010	----	0.72 %	A	10
$\gamma$	1.0029	0.0008	----	0.26 %	A	10
$R'$	0.6527	0.0010	----	0.31 %	A	10
$\gamma'$	1.0029	0.0008	----	0.16 %	A	10
$R_x$	0.3227	0.0000	----	0.00 %	A	10
$\gamma_x$	1.0000	0.0008	----	0.18 %	A	10
$R_z$	0.3227	0.0006	----	0.17 %	A	10
$\gamma_z$	1.0029	0.0008	----	0.08 %	A	10
$D$	1.0000	0.0040	----	0.40 %	A	3
$B$	0.0000	0.0000	mg / kg	0.00 %	A	3
Secondary contributions to uncertainty						
$C_z$	0.2589	0.0008	mg / kg	0.30 %	B	Japanese calibration service
$R_\gamma$	4171.4283	1299.6369	----	0.00 %	B	
$\alpha_\gamma$	1.0000	0.0000	----	0.00 %	B	
$m_x$	5.5764	0.0002	g	0.00 %	B	Balance linearity
$m_\gamma$	0.9877	0.0002	g	0.02 %	B	Balance linearity
$m'_\gamma$	0.9885	0.0002	g	0.02 %	B	Balance linearity
$m_z$	0.9912	0.0002	g	0.02 %	B	Balance linearity
$\sum \gamma x_i \cdot R x_i$	1.3227	0.0000	----	0.00 %	B	
$\sum \gamma z_i \cdot R z_i$	1.3227	0.0000	----	0.00 %	B	
$C_x$	108.5	ng / g				
$u(C_x)$	1.1	ng / g				
$U$	2.2	ng / g				
$U (\%)$	2.0	%				