

Supplementary material for the article:

Stefanović, V.; Trifković, J.; Djurdjić, S.; Vukojević, V.; Tešić, Ž.; Mutić, J. Study of Silver, Selenium and Arsenic Concentration in Wild Edible Mushroom *Macrolepiota Procera*, Health Benefit and Risk. *Environmental Science and Pollution Research* **2016**, 23 (21), 22084–22098. <https://doi.org/10.1007/s11356-016-7450-2>

Supplementary data

Study of silver, selenium and arsenic concentration in wild edible mushroom *Macrolepiota procera*, benefit and health risk

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Table A. Instrument operating conditions

ICP OES	iCAP 6500	ICP MS	iCAP Q MS
Rf power (W)	1150	Rf power (W)	1548
Nebulizer	Concentric	Gas flows (L/min)	13.9: 1.09; 0.8
Spray chamber	Cyclonic	Acquisition time	3 x 50 s
Principal argon flow rate (L/min)	12	Points per peak	3
Auxiliary argon flow rate (L/min)	0.5	Dwell time (ns)	10
Nebulizer flow rate (L/min)	0.5	Detector mode	Pulse
Sample flow rate (ml/min)	1.0	Replicates	3
Selected wavelenghts (nm)	Ca (373.6), Mg (279.5), Na (589.5), K (766.4)	Measured isotope	75As, 78Se, 108Ag

Table B. Results of determination of elements in reference material ERM-CD281 (rye grass)

Element	ERM-CD281 (rye grass)	
	Certified value \pm uncertainty* (mg/kg)	Found value \pm uncertainty (mg/kg)
As	0.042 \pm 0.010	0.040 \pm 0.005
Se	0.023 \pm 0.004	0.025 \pm 0.002
Additional material information		
	Value (g/kg)	Found value
Ca	6.3	6.298
K	34	34.02
Mg	1.6	1.601
Na	4.0	4.010

*Uncertainty for 95 % confidence level

Table C. Recovery test for determination of Ag in mushroom samples.

In sample $\mu\text{g/L}$	Added ($\mu\text{g/L}$)	Found ($\mu\text{g/L}$)	Recovery (%)
3.828	5.0	8.863	100.4
3.828	10.0	13.800	99.8

Table D. Results of determination of elements in certified reference material SPE001 (metal in soil-PT)

Element	SPE001 (metal in soil)	
	Certified value \pm uncertainty* (mg/kg)	Found value \pm uncertainty (mg/kg)
As	201 \pm 1.03	198 \pm 0.45
Ca	2010 \pm 10.2	2015 \pm 9
Mg	4000 \pm 20.4	4012 \pm 19
K	1800 \pm 8.14	1790 \pm 12
Ag	51.2 \pm 0.261	51.24 \pm 0.03
Na	822 \pm 3.17	818 \pm 10
Se	72.4 \pm 0.369	72.1 \pm 0.11

*Uncertainty for 95 % confidence level

Table E. Mann-Whitney U-test - median difference between the metal content in mushroom and corresponding soil samples.

Variable	S1	S2	S3	S4	S5
	Significance level (<i>P</i>)				
Ag	0.0090	0.0209	0.0194	0.0039	<0.0001
As	0.0090	0.0209	0.0194	0.0039	<0.0001
Se	0.0283	0.5637	0.0194	0.0039	<0.0001
Ca	0.0090	0.0209	0.0194	0.0039	<0.0001
Mg	0.0090	0.0209	0.0194	0.0039	<0.0001
K	0.0090	0.0209	0.0194	0.0039	<0.0001
Na	0.4647	0.0209	0.0796	0.3367	0.4810