

Analysis of Mycotoxin and Secondary Metabolites in Commercial and Traditional Slovak Cheese Samples

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Table S1. Occurrence of 13 target compounds in Slovak cheese samples ($n = 68$). Results are expressed as $\mu\text{g/kg}$ samples.

Sample	3-NPA*	Andrastin A	Andrastin B	Andrastin C	Andrastin D	Chanoclavine	Enniatin B	Festoclavine	iso-Fumigaclavine	Mycophenolic acid	Roquefortine C	Roquefortine D	Tryptophol
$\mu\text{g/kg}$													
<i>Traditional Slovak cheeses:</i>													
1	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.51	<LOD	<LOD	<LOD	<LOD	<LOD	41.2
2	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.36	<LOD	<LOD	<LOD	<LOD	<LOD	<LOQ
3	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.22	<LOD	<LOD	<LOD	<LOD	<LOD	7930
4	66.7	8890	3610	3150	115.7	3.1	0.39	1.2	178	29.4	8055	591.8	<LOQ
5	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.71	<LOD	<LOD	<LOD	<LOD	<LOD	162.7
6	10.6	7510	2750	3570	89.7	7.5	0.26	2	294	20.7	17900	924	298.5
7	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.45	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
8	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.07	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
9	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.10	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
10	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.06	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
11	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.04	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
12	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.04	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
13	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.16	<LOD	<LOD	<LOD	<LOD	<LOD	13.4
14	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.11	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
15	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.04	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
16	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.69	<LOD	<LOD	<LOD	<LOD	<LOD	241.1
17	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.22	<LOD	<LOD	<LOD	<LOD	<LOD	374.1
18	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.07	<LOD	<LOD	<LOD	<LOD	<LOD	15.00
19	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.17	<LOD	<LOD	<LOD	<LOD	<LOD	30.7
20	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.29	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
21	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.11	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
22	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.04	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
23	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.17	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
24	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.06	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
25	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.12	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD



26	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.29	<LOD	<LOD	<LOD	<LOD	<LOD	52.6
27	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.31	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
28	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.08	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
29	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.09	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Commercial Slovak cheeses:													
30	16.9	9140	1954	1579.5	152.3	6.9	0.53	0.21	90	16.2	13700	901.7	<LOD
31	3.8	<LOD	<LOD	<LOD	<LOD	<LOD	0.34	<LOD	<LOD	<LOD	<LOD	<LOD	171
32	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.11	<LOD	<LOD	<LOD	<LOD	<LOD	138.6
33	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.23	<LOD	<LOD	<LOD	<LOD	<LOD	<LOQ
34	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.13	<LOD	<LOD	<LOD	<LOD	<LOD	19.5
35	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.18	<LOD	<LOD	<LOD	<LOD	<LOD	17.4
36	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.07	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
37	27.2	4782	2448	3083	96.2	4.9	0.57	1.3	135.41	28.69	11853	679	<LOD
38	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.05	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
39	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.07	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
40	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.17	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
41	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.26	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
42	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.02	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
43	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.09	<LOD	<LOD	<LOD	<LOD	<LOD	304.5
44	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.08	<LOD	<LOD	<LOD	<LOD	<LOD	266.5
45	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.29	<LOD	<LOD	<LOD	<LOD	<LOD	17.3
46	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.08	<LOD	<LOD	<LOD	<LOD	<LOD	15.5
47	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.04	<LOD	<LOD	<LOD	<LOD	<LOD	99.2
48	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.11	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
49	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.19	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
50	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.16	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
51	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.17	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
52	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.17	<LOD	<LOD	<LOD	<LOD	<LOD	<LOQ
53	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.06	<LOD	<LOD	<LOD	<LOD	<LOD	151
54	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.26	<LOD	<LOD	<LOD	<LOD	<LOD	353.7
55	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.05	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
56	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.10	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
57	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.08	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
58	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.24	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
59	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.07	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
60	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.10	<LOD	<LOD	<LOD	<LOD	<LOD	<LOQ
61	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.10	<LOD	<LOD	<LOD	<LOD	<LOD	<LOQ
62	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.10	<LOD	<LOD	<LOD	<LOD	<LOD	72.32
63	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.20	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD

64	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.07	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
65	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.17	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
66	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.11	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
67	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.09	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
68	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	0.13	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
LOD (µg/kg)	0.74	0.25	0.87	0.25	0.25	0.18	0.01	0.03	0.12	1.16	0.47	0.54	3.52
LOQ (µg/kg)	2.71	0.83	2.91	0.83	0.83	0.61	0.04	0.10	0.41	3.88	1.56	1.81	11.70

*3-Nitropropionic acid

Table S2. Characteristics of the 68 analyzed samples, original traditional Slovak cheeses came from markets and local farmers using a traditional biotechnical process at manufacture ($n = 29$) and common commercial Slovak cheeses came from markets ($n = 39$).

Sample ID	Type of Cheese	Commercial Name/Origin of Cheese
<i>Traditional Slovak cheeses:</i>		
1	Camembert (P. Candidum)/ Cow's Cheese ¹	-
2	Camembert (P. Candidum)/ Cow's Cheese ²	-
3	Camembert (P. Candidum)/ Cow's Cheese ³	-
4	Camembert (P. Candidum)/ Cow's Cheese	-
5	Camembert (P. Candidum)/ Cow's Cheese	-
6	Niva (P. Roquefortii) / Cow's Cheese	-
7	Niva (P. Roquefortii) / Cow's Cheese	-
8	Niva (P. Roquefortii) / Cow's Cheese	-
9	Niva (P. Roquefortii) / Cow's Cheese	-
10	Bryndza/ Sheep cheese	-
11	Bryndza/ Sheep cheese	-
12	Bryndza/ Sheep cheese	-
13	Bryndza/ Sheep cheese	-
14	Bryndza/ Sheep cheese	-
15	Bryndza/ Sheep cheese	-
16	Parenica/ Cow's Cheese	-
17	Parenica/ Cow's Cheese	-
18	Oštiepok/ Cow's Cheese	-



19	Baranec/Sheep Cheese	-
20	Nite/Cow's Cheese	-
21	Nite/Cow's Cheese	-
22	Nite/Cow's Cheese	-
23	Nite/Cow'S Cheese	-
24	Korbáčik/Cow's Cheese	-
25	Korbáčik/Cow's Cheese	-
26	Korbáčik/Cow's Cheese	-
27	Korbáčik/Cow's Cheese	-
28	Sheep Cheese Not Smoked	-
29	Sheep Cheese Smoked	-

Commercial Slovak cheeses:

30	Sheep/Not Smoked/Lump	Ovčia Kolibka Spiš, Kluknavská Mliekárň
31	Sheep/ Not Smoked/Lump	Čierny Balog
32	Sheep/ Not Smoked/Lump	Plachtická Farma Baránek, Dolné Plachtince
33	Sheep/ Not Smoked/Fresh	Plachtická Farma Baránek, Dolné Plachtince
34	Sheep/Not Smoked/Lump	Kochanovce
35	Sheep/Not Smoked/Lump	Kluknavská Mliekárň, Jaklovce
36	Sheep/Not Smoked/Lump	Kozí Vášok, Ivachnová, Liptovská Teplá
37	Sheep/Smoked/Lump	Ovčia Kolibka Spiš, Kluknavská Mliekárň
38	Sheep/Smoked/Lump	Agronova, Liptov, Farma Bukovina
39	Sheep/Smoked/Lump	Agronova, Liptov, Farma Bukovina
40	Cow/Semi-Soft, Ripening, Full-Fat/Lump	Agrofarma, Červený Kameň
41	Cow/Hard, Ripening, Full-Fat, /Lump	Agrofarma, Červený Kameň
42	Cow/Semi - Soft, Ripening Full - Fat/Lump	Syráreň Bel, Michalovce
43	Cow/Steamed, Semi-Hard, Ripening, Semi-Fat	Agrofarma, Červený Kameň
44	Cow/Steamed, Semi-Hard, Unripened, Semi-Fat	Agrofarma, Červený Kameň
45	Cow/Natural, Full-Fat, Unripened, Soft	Vážec
46	Cow's Cheese	-
47	Cow/Fresh, Natural, Soft, Unripened, Full-Fat	Mliekárň Sky Group/Považský Inovec. Stará Lehota
48	Cow/Soft, White	Moja Kravička/Slatina Nad Bebravou
49	Cow/Natural Ripening Semi - Hard, Semi - Fat	Syrošík, Farma Východná



50	Cow/Unripened, Full-Fat	Mliekáreň Sky Group/Považský Inovec. Stará Lehota
51	Cow/Semi-Hard Ripening Full-Fat	Syráreň Havran, Senica
52	Cow/Natural, Semi-Soft, Full-Fat	Volovec, Milk-Agro, Prešov
53	Cow/Ripening, Semi-Soft, Full-Fat	Liptov, Savencia Fromage and Dairy
54	Cow/Ripening, Semi-Soft, Full-Fat	Syráreň Bel, Michalovce
55	Cow/Ripening, Semi-Soft, Full-Fat	Levické Mliekárne, Levice
56	Cow/Ripening, Semi-Soft, Full-Fat	Koliba, Hriňová
57	Cow/Ripening, Semi-Soft, Full-Fat	Levické Mliekárne, Levice
58	Cow/Ripening, Semi-Soft, Full-Fat	Farma Baránek, Dolné Plachtince
59	Cow/Ripening, Semi-Soft, Full-Fat	Nika, Považská Bystrica
60	Cow/Ripening, Semi-Soft, Semi-Fat	Syráreň Bel, Michalovce
61	Cow/Ripening, Semi-Soft, Full-Fat	Milk-Agro, Čapajevova, Prešov
62	Cow/Ripening, Semi-Soft, Full-Fat	Koliba, Krivec, Hriňová
63	Cow/Ripening, Semi-Soft, Full-Fat	Syráreň Bel, Michalovce
64	Cow/Ripening, Semi-Soft, Full-Fat	Liptov, Savencia Fromage and Dairy
65	Goat/Fresh/Full-Fat	Plachtická Farma Baránek, Dolné Plachtince
66	Goat/Ripening/Full-Fat	Plachtická Farma Baránek, Dolné Plachtince
67	Goat/Ripening/Full-Fat	Leonteus, Ivachnová, Liptovská Teplá
68	Goat/Fresh/Full-Fat	Syrex, Zázrivá

***Commercial Name/Origin of The Cheese:** 1 Plesnivec, Tami, Tatranská Mliekáreň, 2 Encián, Tami, Tatranská Mliekáreň, 3 Encián With Olives, Tami, Tatranská Mliekáreň