

Phenolic Compounds as Phytochemical Tracers of Varietal Origin of Some Autochthonous Apple Cultivars Grown in Serbia

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Table S1. Total phenolic content (TPC), DPPH radical scavenging activity (RSA) and individual phenolics content in the samples.

Tissue	Mesocarp														
Year	2018														
Cultivar number ¹	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type ²	S	S	S	S	S	R	R	R	R	R	R	A	A	A	A
TPC ³	0.49	1.41	0.67	0.62	0.46	0.92	0.39	0.27	0.33	0.64	0.53	2.44	0.82	1.03	4.51
RSA ⁴	17.58	20.97	18.63	18.71	8.94	19.70	15.86	7.98	8.57	16.78	19.73	30.30	16.03	17.84	45.52
5-O-Caffeoylquinic acid ⁵	17.88	36.53	68.37	58.27	17.34	134.03	37.81	30.34	28.93	29.59	6.73	128.16	101.23	37.20	206.75
Caffeic acid	0.06	0.13	0.27	0.22	0.07	0.49	0.14	0.13	0.10	0.09	0.04	0.39	0.43	0.14	0.84
Phloretin	0.05	0.06	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.07	0.09	0.09	0.06
Phlorizin	1.24	2.52	2.05	2.87	0.46	3.82	0.83	0.78	0.57	0.75	0.34	2.50	4.28	3.32	4.94
Quercetin	0.10	0.11	0.13	0.21	0.11	0.25	0.12	0.08	0.06	0.03	0.11	0.29	0.44	0.26	0.24
Rutin	0.00	0.00	0.00	0.02	0.03	0.06	0.04	0.00	0.02	0.00	0.03	0.00	0.10	0.00	0.29
Quercetin-3-O-glucoside	0.32	0.29	0.93	0.70	0.28	1.84	1.34	0.87	0.12	0.06	1.35	0.53	1.37	0.51	1.83
Quercetin-3-O-rhamnoside	0.63	1.62	0.48	2.72	2.67	4.09	1.03	1.77	1.64	0.45	0.51	3.18	0.60	0.79	2.13
Isorhamnetin-3-O-glucoside	1.63	0.08	0.04	0.06	0.02	0.05	0.02	0.02	1.68	1.67	1.69	1.85	1.83	1.81	1.84
Kaempferol	0.53	0.54	0.56	0.54	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.54
Naringenin	0.54	0.55	0.57	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.55
Protocatechuic acid	0.58	0.59	0.60	0.59	0.60	0.60	0.60	0.59	0.59	0.59	0.60	0.59	0.60	0.60	0.59
<i>p</i> -Hydroxybenzoic acid	0.38	0.39	0.40	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.39	0.39
Catechin	6.37	35.67	6.04	8.84	2.68	14.80	4.84	0.70	3.33	7.11	6.14	40.79	7.63	11.69	14.90
<i>p</i> -Coumaric acid	0.01	0.05	0.07	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.07	0.04	0.21
Isorhamnetin-3-O-rutinoside	0.45	0.46	0.47	0.46	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.46
Ferulic acid	0.65	0.01	0.68	0.67	0.68	0.02	0.68	0.02	0.02	0.67	0.02	0.04	0.02	0.02	0.04
Kaempferol-7-O-glucoside	0.56	0.45	0.28	0.26	0.27	0.52	0.19	0.83	0.20	0.16	0.32	0.53	0.33	0.77	0.52
Apigenin	0.39	0.40	0.41	0.40	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.40	0.41	0.41	0.40
Luteolin	0.32	0.33	0.34	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.34	0.33	0.33
Eriodictyol	0.58	0.59	0.61	0.59	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.61	0.60	0.59
Gallic acid	0.47	0.48	0.49	0.48	0.48	0.49	0.48	0.48	0.48	0.48	0.49	0.48	0.49	0.49	0.48
Naringin	0.36	0.37	0.38	0.37	0.38	0.38	0.38	0.37	0.37	0.37	0.38	0.37	0.38	0.38	0.37

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthtonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue Year	Mesocarp 2018															
	Cultivar number ¹	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Type ²	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TPC ³	0.83	1.43	1.34	2.15	1.31	1.23	1.23	0.99	1.77	4.42	1.67	1.30	0.74	1.50	1.38	
RSA ⁴	10.25	18.82	21.20	18.59	26.78	19.26	17.20	17.23	8.48	19.02	16.55	16.53	18.46	20.41	17.21	
5- <i>O</i> -Caffeoylquinic acid ⁵	34.88	196.92	163.34	130.34	191.04	170.71	187.21	82.67	103.51	212.18	185.19	132.68	135.58	144.25	148.55	
Caffeic acid	0.14	0.75	0.65	0.49	0.67	0.67	0.63	0.31	0.37	0.72	0.67	0.49	0.46	0.51	0.48	
Phloretin	0.05	0.14	0.11	0.12	0.08	0.09	0.07	0.06	0.07	0.11	0.06	0.10	0.06	0.07	0.05	
Phlorizin	1.76	8.42	6.22	9.00	5.17	5.44	4.10	2.26	4.97	7.99	2.69	4.19	2.26	3.91	2.68	
Quercetin	0.16	0.74	0.36	0.64	0.64	0.15	0.10	0.26	0.08	0.08	0.14	0.13	0.03	0.45	0.30	
Rutin	0.00	0.60	0.04	0.02	0.00	0.01	0.00	0.03	0.05	0.31	0.02	0.00	0.00	0.16	0.04	
Quercetin-3- <i>O</i> -glucoside	0.56	4.71	0.63	1.14	1.39	0.60	0.23	0.82	0.63	0.80	0.48	0.49	0.50	5.45	0.47	
Quercetin-3- <i>O</i> -rhamnoside	0.97	1.15	0.38	5.19	2.74	0.19	1.39	3.20	0.31	0.80	1.47	0.17	0.78	3.75	1.61	
Isorhamnetin-3- <i>O</i> -glucoside	0.03	1.65	1.69	0.03	0.12	1.71	0.04	0.01	1.56	1.66	1.70	0.02	0.02	0.02	1.68	
Kaempferol	0.56	0.54	0.55	0.56	0.55	0.56	0.56	0.55	0.51	0.54	0.55	0.52	0.55	0.56	0.55	
Naringenin	0.57	0.55	0.56	0.57	0.56	0.57	0.57	0.56	0.52	0.55	0.56	0.53	0.56	0.57	0.56	
Protocatechuic acid	0.60	0.59	0.60	0.61	0.60	0.61	0.61	0.60	0.55	0.59	0.60	0.57	0.60	0.60	0.60	
<i>p</i> -Hydroxybenzoic acid	0.40	0.38	0.39	0.40	0.39	0.40	0.40	0.39	0.36	0.39	0.39	0.37	0.39	0.40	0.39	
Catechin	7.23	13.37	18.63	53.08	9.95	15.39	10.42	19.05	4.37	12.25	29.97	12.09	3.91	27.79	18.90	
<i>p</i> -Coumaric acid	0.03	0.10	0.11	0.35	0.15	0.07	0.09	0.09	0.06	0.08	0.03	0.07	0.08	0.04	0.05	
Isorhamnetin-3- <i>O</i> -rutinoside	0.48	0.46	0.47	0.48	0.47	0.48	0.48	0.47	0.43	0.46	0.47	0.45	0.47	0.47	0.47	
Ferulic acid	0.69	0.04	0.03	0.12	0.07	0.69	0.02	0.19	0.02	0.03	0.01	0.02	0.02	0.05	0.03	
Kaempferol-7- <i>O</i> -glucoside	0.87	0.54	0.23	1.16	0.43	0.25	0.39	0.32	0.21	0.50	0.45	0.22	0.65	0.58	0.31	
Apigenin	0.41	0.40	0.41	0.41	0.41	0.41	0.41	0.41	0.38	0.40	0.41	0.39	0.41	0.41	0.41	
Luteolin	0.34	0.33	0.34	0.34	0.33	0.34	0.34	0.33	0.31	0.33	0.34	0.32	0.34	0.34	0.33	
Eriodictyol	0.61	0.59	0.60	0.61	0.60	0.61	0.61	0.60	0.56	0.59	0.61	0.57	0.60	0.61	0.60	
Gallic acid	0.49	0.48	0.49	0.49	0.49	0.49	0.49	0.49	0.45	0.48	0.49	0.46	0.49	0.49	0.48	
Naringin	0.38	0.37	0.38	0.38	0.38	0.38	0.38	0.38	0.35	0.37	0.38	0.36	0.38	0.38	0.38	

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue Year	Mesocarp 2019														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cultivar number ¹															
Type ²	S	S	S	S	S	R	R	R	R	R	R	A	A	A	A
TPC ³	0.51	0.73	0.59	0.42	0.22	0.11	0.12	0.14	1.61	0.70	0.31	1.96	2.59	0.88	2.15
RSA ⁴	9.28	9.44	9.02	7.79	9.64	9.58	7.75	8.04	8.79	8.28	7.91	9.31	9.17	9.37	10.17
5- <i>O</i> -Caffeoylquinic acid ⁵	1.86	3.23	6.46	4.05	5.54	3.55	2.77	10.72	5.91	8.43	0.48	18.82	15.66	7.22	41.99
Caffeic acid	1.02	1.02	1.01	0.99	1.04	1.00	0.97	0.95	1.01	0.99	0.93	0.91	1.01	1.00	0.98
Phloretin	0.04	0.05	0.06	0.06	0.04	0.06	0.04	0.09	0.05	0.04	0.04	0.07	0.17	0.07	0.15
Phlorizin	0.87	0.62	0.91	0.96	0.55	0.39	0.22	1.14	0.55	0.43	0.11	1.06	2.40	2.28	4.40
Quercetin	1.76	1.75	1.74	1.70	1.79	1.73	1.67	1.63	1.74	1.71	1.60	1.57	1.73	1.72	1.69
Rutin	0.03	0.05	0.07	0.08	0.07	0.03	0.04	0.04	0.07	0.04	0.03	0.05	0.10	0.04	0.14
Quercetin-3- <i>O</i> -glucoside	0.19	0.22	0.36	0.37	0.94	0.17	0.18	0.24	0.24	0.23	0.18	0.36	0.53	0.23	0.37
Quercetin-3- <i>O</i> -rhamnoside	0.28	0.45	0.17	1.14	1.02	0.26	0.26	0.29	0.68	0.18	0.13	1.04	0.10	0.29	0.12
Isorhamnetin-3- <i>O</i> -glucoside	0.02	0.02	0.01	0.08	0.05	0.01	0.02	0.01	0.01	0.00	0.01	0.06	0.10	0.07	0.04
Kaempferol	1.07	1.06	1.05	1.03	1.08	1.04	1.01	0.99	1.05	1.03	0.97	0.95	1.05	1.04	1.02
Naringenin	1.09	1.08	1.07	1.05	1.10	1.06	1.03	1.01	1.07	1.05	0.98	0.96	1.07	1.06	1.04
Protocatechuic acid	1.16	1.15	1.14	1.12	1.18	1.13	1.10	1.07	1.14	1.12	1.05	1.03	1.14	1.13	1.11
<i>p</i> -Hydroxybenzoic acid	0.76	0.76	0.75	0.73	0.77	0.74	0.72	0.70	0.75	0.74	0.69	0.67	0.75	0.74	0.73
Catechin	1.40	1.39	1.38	1.35	1.42	1.37	1.33	1.30	1.38	1.36	1.27	1.25	1.38	1.37	1.34
<i>p</i> -Coumaric acid	0.34	0.34	0.33	0.33	0.34	0.33	0.32	0.31	0.33	0.33	0.31	0.30	0.33	0.33	0.32
Isorhamnetin-3- <i>O</i> -rutinoside	0.91	0.91	0.90	0.88	0.92	0.89	0.86	0.84	0.90	0.88	0.83	0.81	0.90	0.89	0.87
Ferulic acid	1.31	1.31	1.29	1.27	1.33	1.29	1.25	1.22	1.30	1.27	1.19	1.17	1.29	1.29	1.26
Kaempferol-7- <i>O</i> -glucoside	1.26	1.25	1.24	1.21	1.28	1.23	1.19	1.17	1.24	1.22	1.14	1.12	1.24	1.23	1.20
Apigenin	0.79	0.78	0.78	0.76	0.80	0.77	0.75	0.73	0.78	0.76	0.72	0.70	0.78	0.77	0.75
Luteolin	0.65	0.64	0.64	0.62	0.66	0.63	0.61	0.60	0.64	0.63	0.59	0.57	0.64	0.63	0.62
Eriodictyol	1.17	1.16	1.15	1.12	1.18	1.14	1.10	1.08	1.15	1.13	1.06	1.03	1.14	1.14	1.11
Gallic acid	0.94	0.94	0.93	0.91	0.96	0.92	0.89	0.87	0.93	0.91	0.85	0.84	0.93	0.92	0.90
Naringin	0.02	0.22	0.29	0.12	0.23	0.03	0.05	0.14	0.13	0.14	0.04	0.89	1.14	0.08	0.38

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue	Mesocarp															
Year	2019															
Cultivar number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 ⁶
Type	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TPC	1.30	1.01	0.97	1.85	1.44	0.81	1.40	1.53	1.77	1.57	1.19	1.57	1.17	2.17	1.98	1.07
RSA	10.97	10.17	11.91	9.50	10.42	8.62	8.13	9.52	9.22	6.54	9.36	6.03	9.95	10.41	11.42	8.81
5- <i>O</i> -Caffeoylquinic acid ⁵	10.31	14.90	7.78	16.94	20.66	11.09	30.62	21.07	30.06	25.70	17.83	23.66	28.50	22.10	24.39	17.80
Caffeic acid	1.04	1.00	0.98	0.97	1.02	0.99	0.93	0.94	0.97	1.01	0.97	1.00	0.95	0.97	1.03	1.01
Phloretin	0.20	0.17	0.08	0.23	0.09	0.11	0.12	0.09	0.21	0.24	0.10	0.22	0.08	0.15	0.26	0.10
Phlorizin	3.99	2.19	1.32	3.65	1.50	1.90	2.67	1.58	3.70	5.93	1.54	3.59	1.36	1.65	5.11	1.65
Quercetin	1.79	1.73	1.69	1.67	1.75	1.71	1.61	1.62	1.67	1.73	1.67	1.73	1.64	1.66	1.77	1.74
Rutin	0.06	0.05	0.05	0.11	0.03	0.05	0.05	0.06	0.12	0.03	0.23	0.08	0.05	0.04	0.06	0.11
Quercetin-3- <i>O</i> -glucoside	0.37	0.37	0.58	1.02	0.31	0.40	0.49	0.60	0.61	0.21	1.01	0.70	0.30	0.22	0.34	0.56
Quercetin-3- <i>O</i> -rhamnoside	0.36	0.08	0.68	1.04	0.67	0.05	0.57	0.63	0.10	0.13	0.55	0.07	0.31	0.23	0.66	0.34
Isorhamnetin-3- <i>O</i> -glucoside	0.06	0.05	0.04	0.08	0.03	0.06	0.04	0.06	0.04	0.05	0.08	0.04	0.02	0.00	0.03	0.04
Kaempferol	1.08	1.04	1.02	1.01	1.06	1.03	0.97	0.98	1.01	1.05	1.01	1.04	0.99	1.01	1.07	1.05
Naringenin	1.10	1.06	1.04	1.03	1.08	1.05	0.99	1.00	1.03	1.07	1.03	1.06	1.01	1.02	1.09	1.07
Protocatechuic acid	1.18	1.13	1.11	1.10	1.15	1.12	1.06	1.06	1.09	1.14	1.10	1.13	1.07	1.09	1.16	1.14
<i>p</i> -Hydroxybenzoic acid	0.77	0.74	0.73	0.72	0.75	0.74	0.69	0.70	0.72	0.75	0.72	0.74	0.70	0.72	0.76	0.75
Catechin	1.43	1.37	1.34	1.33	1.39	1.36	1.28	1.29	1.32	1.38	1.33	1.37	1.30	1.32	1.40	1.39
<i>p</i> -Coumaric acid	0.34	0.33	0.32	0.32	0.34	0.33	0.31	0.31	0.32	0.33	0.32	0.33	0.31	0.32	0.34	0.33
Isorhamnetin-3- <i>O</i> -rutinoside	0.93	0.89	0.87	0.86	0.90	0.88	0.83	0.84	0.86	0.89	0.86	0.89	0.85	0.86	0.91	0.90
Ferulic acid	1.34	1.29	1.26	1.25	1.31	1.27	1.20	1.21	1.24	1.29	1.24	1.29	1.22	1.24	1.32	1.30
Kaempferol-7- <i>O</i> -glucoside	1.28	1.23	1.20	1.19	1.25	1.22	1.15	1.15	1.19	1.24	1.19	1.23	1.17	1.19	1.26	1.24
Apigenin	0.80	0.77	0.76	0.75	0.78	0.76	0.72	0.72	0.75	0.77	0.75	0.77	0.73	0.74	0.79	0.78
Luteolin	0.66	0.63	0.62	0.61	0.64	0.63	0.59	0.59	0.61	0.64	0.61	0.63	0.60	0.61	0.65	0.64
Eriodictyol	1.18	1.14	1.12	1.10	1.16	1.13	1.06	1.07	1.10	1.14	1.10	1.14	1.08	1.10	1.17	1.15
Gallic acid	0.96	0.92	0.90	0.89	0.93	0.91	0.86	0.86	0.89	0.92	0.89	0.92	0.87	0.89	0.94	0.93
Naringin	0.16	1.02	0.20	0.88	0.87	0.80	0.88	0.64	1.86	0.49	0.24	1.57	0.61	0.60	1.53	0.17

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

6 – sample unavvaible in 2018.

Table S1. Continued

Tissue Year	Peel 2018														
Cultivar number ¹	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type ²	S	S	S	S	S	R	R	R	R	R	R	A	A	A	A
TPC ³	3.67	5.31	6.51	3.43	4.55	5.44	4.52	3.55	3.30	3.13	3.50	7.71	6.78	7.52	6.70
RSA ⁴	50.75	57.64	42.08	29.34	36.35	61.21	33.25	30.81	54.82	26.28	31.12	49.35	40.93	43.19	41.46
5- <i>O</i> -Caffeoylquinic acid ⁵	4.55	7.58	85.52	63.33	12.64	206.53	49.84	11.99	25.73	12.46	3.81	80.99	312.00	24.77	557.46
Caffeic acid	0.03	0.05	0.34	0.26	0.08	0.83	0.24	0.06	0.13	0.07	0.05	0.33	1.30	0.15	1.69
Phloretin	0.14	0.07	0.16	0.17	0.20	0.17	0.14	0.07	0.05	0.11	0.14	0.37	1.25	0.61	1.00
Phlorizin	20.66	6.10	23.09	19.18	10.52	13.77	12.14	3.95	4.03	4.05	4.99	31.99	42.85	38.31	30.21
Quercetin	28.22	21.00	30.59	27.83	28.62	33.74	25.60	20.44	9.53	19.42	15.91	31.67	33.07	45.77	20.18
Rutin	2.20	13.41	3.26	5.01	1.87	5.59	3.12	3.67	3.24	5.70	1.28	2.55	9.41	4.43	11.96
Quercetin-3- <i>O</i> -glucoside	49.12	62.71	57.45	53.31	34.87	55.39	48.39	45.36	35.21	41.72	24.24	45.43	45.11	54.00	32.31
Quercetin-3- <i>O</i> -rhamnoside	25.63	38.94	27.15	26.00	29.40	67.68	23.90	48.94	47.49	42.03	6.71	22.66	16.99	24.11	17.79
Isorhamnetin-3- <i>O</i> -glucoside	0.65	0.66	3.27	0.21	1.03	2.24	0.28	1.47	0.06	0.14	0.04	4.55	0.08	1.51	0.08
Kaempferol	0.23	0.15	0.12	0.24	0.23	0.72	0.19	0.30	0.15	0.35	0.14	0.23	0.42	0.67	0.41
Naringenin	0.06	0.04	0.08	0.06	0.12	0.08	0.06	0.09	0.02	0.04	0.57	0.14	0.08	0.56	0.06
Protocatechuic acid	0.51	0.51	0.86	0.52	0.57	1.01	0.68	0.92	0.57	0.54	0.97	0.57	0.65	0.71	0.99
<i>p</i> -Hydroxybenzoic acid	0.07	0.11	0.10	0.07	0.20	0.05	0.08	0.15	0.08	0.15	0.13	0.09	0.12	0.16	0.30
Catechin	28.26	33.26	41.53	24.10	21.31	35.51	43.72	6.79	15.69	16.18	21.42	74.61	59.42	50.27	30.25
<i>p</i> -Coumaric acid	0.04	0.05	0.09	0.05	0.06	0.17	0.07	0.05	0.05	0.07	0.08	0.05	0.34	0.06	0.69
Isorhamnetin-3- <i>O</i> -rutinoside	0.22	0.15	0.39	0.07	0.28	0.94	0.10	0.50	1.10	0.13	0.02	0.65	0.47	0.22	0.48
Ferulic acid	0.69	0.05	0.03	0.67	0.02	0.05	0.05	0.06	0.03	0.03	0.05	0.03	0.21	0.03	0.25
Kaempferol-7- <i>O</i> -glucoside	6.06	2.73	0.66	3.27	0.66	0.65	2.28	0.65	3.22	5.53	1.97	0.66	2.13	0.64	4.66
Apigenin	0.41	0.40	0.41	0.40	0.41	0.41	0.41	0.41	0.95	0.41	0.42	0.41	0.41	0.40	0.41
Luteolin	0.34	0.33	0.34	0.33	0.34	0.33	0.34	0.33	0.78	0.33	0.34	0.34	0.34	0.33	0.34
Eriodictyol	0.61	0.59	0.61	0.59	0.61	0.60	0.61	0.60	1.40	0.60	0.62	0.61	0.60	0.60	0.61
Gallic acid	0.49	0.48	0.49	0.48	0.49	0.48	0.49	0.49	1.13	0.49	0.50	0.49	0.49	0.48	0.49
Naringin	0.38	0.37	0.38	0.37	0.38	0.38	0.38	0.38	0.88	0.38	0.39	0.38	0.38	0.37	0.38

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthtonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue Year	Peel 2018														
Cultivar number ¹	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Type ²	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TPC ³	6.60	6.40	5.70	8.54	7.53	7.52	4.87	4.35	5.07	8.42	7.57	7.91	5.41	8.59	9.26
RSA ⁴	40.85	41.45	37.08	44.13	45.61	39.48	39.21	29.51	34.16	45.64	45.86	40.38	36.07	48.44	45.71
5- <i>O</i> -Caffeoylquinic acid ⁵	36.15	428.67	430.92	93.81	503.12	214.73	224.67	96.40	326.37	269.85	257.52	227.26	235.77	272.71	312.87
Caffeic acid	0.12	1.52	1.64	1.05	1.71	0.80	0.89	0.49	1.35	0.84	1.19	0.79	0.78	0.81	1.29
Phloretin	0.68	1.26	1.21	0.92	0.38	0.48	0.18	0.21	0.48	0.35	0.12	0.77	0.27	0.53	0.15
Phlorizin	25.77	38.95	35.58	35.46	17.95	44.66	17.54	14.76	43.69	54.25	12.72	59.04	25.24	32.52	13.25
Quercetin	39.11	38.04	22.12	16.99	24.70	27.77	9.78	17.74	21.94	19.30	16.34	20.71	18.61	38.18	14.24
Rutin	5.98	19.70	3.87	1.71	1.26	23.24	0.45	4.30	9.92	20.62	8.12	6.52	0.67	6.29	6.09
Quercetin-3- <i>O</i> -glucoside	42.68	43.15	19.86	15.52	23.53	71.81	9.18	37.66	41.80	75.25	37.63	45.05	30.44	50.68	27.02
Quercetin-3- <i>O</i> -rhamnoside	20.46	15.32	8.50	14.00	18.80	23.20	9.09	20.87	15.38	27.26	16.00	18.84	19.12	25.26	13.00
Isorhamnetin-3- <i>O</i> -glucoside	2.18	0.18	0.06	0.04	1.94	0.28	2.12	0.09	0.17	0.24	0.25	0.18	2.41	0.24	0.14
Kaempferol	0.61	0.59	0.17	0.55	0.34	0.17	0.02	0.11	0.30	0.48	0.22	0.11	0.09	0.39	0.15
Naringenin	0.57	0.11	0.05	0.06	0.09	0.04	0.04	0.04	0.06	0.07	0.03	0.04	0.12	0.14	0.03
Protocatechuic acid	0.89	0.66	0.53	0.51	0.62	0.80	0.43	0.51	0.55	0.85	0.52	0.76	1.07	0.60	0.59
<i>p</i> -Hydroxybenzoic acid	0.17	0.13	0.08	0.18	0.22	0.28	0.07	0.07	0.07	0.32	0.10	0.35	0.17	0.07	0.11
Catechin	31.55	32.30	56.05	136.11	58.32	49.52	29.85	77.83	37.78	43.97	57.66	56.56	34.24	88.20	58.57
<i>p</i> -Coumaric acid	0.04	0.30	0.51	1.50	0.40	0.18	0.23	0.39	0.33	0.09	0.28	0.24	0.18	0.08	0.35
Isorhamnetin-3- <i>O</i> -rutinoside	0.65	0.48	0.47	0.48	0.31	0.46	0.26	0.05	0.47	0.49	0.12	0.13	0.21	0.47	0.07
Ferulic acid	0.69	0.22	0.44	0.48	0.18	0.09	0.09	0.52	0.33	0.03	0.47	0.11	0.04	0.06	0.27
Kaempferol-7- <i>O</i> -glucoside	12.21	3.93	1.42	1.87	0.65	3.08	0.66	1.43	2.55	7.45	2.68	2.30	0.66	3.52	2.76
Apigenin	0.41	0.41	0.41	0.41	0.41	0.40	0.41	0.41	0.41	0.42	0.41	0.41	0.41	0.41	0.41
Luteolin	0.34	0.34	0.34	0.34	0.34	0.33	0.34	0.34	0.33	0.35	0.34	0.34	0.34	0.34	0.34
Eriodictyol	0.61	0.61	0.61	0.61	0.61	0.59	0.61	0.61	0.60	0.62	0.61	0.61	0.61	0.61	0.61
Gallic acid	0.49	0.49	0.49	0.49	0.49	0.48	0.49	0.49	0.49	0.50	0.49	0.49	0.49	0.49	0.49
Naringin	0.38	0.38	0.38	0.38	0.38	0.37	0.38	0.38	0.38	0.39	0.38	0.38	0.38	0.38	0.38

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue Year	Peel 2019														
	Cultivar number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Type	S	S	S	S	S	R	R	R	R	R	R	A	A	A	A
TPC	21.52	24.89	16.11	9.70	37.33	11.66	7.64	15.47	18.37	20.66	10.49	22.26	25.88	22.01	23.42
RSA	34.60	113.34	40.95	23.56	34.36	27.32	21.84	27.21	35.45	31.07	23.42	48.58	38.99	36.24	42.92
5- <i>O</i> -Caffeoylquinic acid ⁵	5.85	128.47	9.33	26.95	100.11	64.38	16.47	18.56	22.27	14.21	27.66	35.98	134.99	11.55	116.21
Caffeic acid	0.07	0.22	0.26	0.13	0.60	0.36	0.08	0.18	0.43	0.22	0.33	0.29	0.97	0.08	0.77
Phloretin	0.52	0.99	0.24	0.43	0.89	0.30	0.12	0.10	0.21	0.61	0.21	0.98	1.54	0.71	0.94
Phlorizin	17.04	42.39	7.69	10.53	30.53	9.83	2.81	1.61	4.98	12.20	6.69	21.09	45.76	23.04	36.21
Quercetin	57.01	20.41	37.10	32.51	27.76	20.67	14.02	41.46	44.78	92.04	18.54	70.28	30.64	51.53	55.63
Rutin	32.12	61.76	33.55	21.88	16.61	12.07	6.57	50.33	47.27	36.25	23.94	35.26	46.62	40.95	229.97
Quercetin-3- <i>O</i> -glucoside	160.14	115.36	153.66	123.16	158.20	104.07	69.73	229.18	158.33	231.86	116.11	164.90	123.63	163.25	244.14
Quercetin-3- <i>O</i> -rhamnoside	41.50	20.41	39.47	38.08	49.81	115.14	26.45	142.32	122.90	80.39	75.90	40.80	24.56	53.05	72.10
Isorhamnetin-3- <i>O</i> -glucoside	19.92	7.28	14.53	10.51	23.84	15.63	8.16	33.93	14.14	48.22	9.46	30.11	8.18	20.31	20.76
Kaempferol	0.87	0.56	0.85	0.63	0.60	0.80	0.51	0.84	1.45	1.32	0.68	0.74	0.60	1.09	1.56
Naringenin	0.21	0.33	0.14	0.13	0.19	0.11	0.05	0.15	0.08	0.24	0.10	0.29	0.28	0.45	0.19
Protocatechuic acid	1.49	1.39	1.40	1.45	1.49	1.50	1.47	1.45	1.49	1.50	1.42	1.50	1.51	1.49	1.49
<i>p</i> -Hydroxybenzoic acid	0.97	0.91	0.92	0.95	0.98	0.98	0.97	0.95	0.98	0.98	0.93	0.98	0.99	0.97	0.98
Catechin	1.80	1.68	1.70	1.76	1.80	1.81	1.78	1.76	1.81	1.82	1.72	1.82	1.83	1.80	1.80
<i>p</i> -Coumaric acid	0.43	0.41	0.41	0.42	0.44	0.44	0.43	0.42	0.44	0.44	0.42	0.44	0.44	0.43	0.43
Isorhamnetin-3- <i>O</i> -rutinoside	1.17	1.09	1.10	1.14	1.17	1.18	1.16	1.14	1.18	1.18	1.12	1.18	1.19	1.17	1.17
Ferulic acid	1.69	1.58	1.59	1.65	1.69	1.70	1.67	1.65	1.70	1.70	1.61	1.70	1.71	1.69	1.69
Kaempferol-7- <i>O</i> -glucoside	1.61	1.51	1.53	1.58	1.62	1.63	1.60	1.58	1.62	1.63	1.54	1.63	1.64	1.61	1.62
Apigenin	0.07	0.13	0.08	0.05	1.02	0.05	0.02	0.08	0.05	0.11	0.97	0.11	0.03	0.20	0.03
Luteolin	0.83	0.78	0.78	0.81	0.83	0.84	0.82	0.81	0.83	0.84	0.79	0.84	0.84	0.83	0.83
Eriodictyol	0.10	0.06	0.06	0.09	0.10	0.04	0.03	0.09	0.12	0.14	0.05	0.14	0.06	0.11	0.06
Gallic acid	1.21	1.13	1.14	1.18	1.21	1.22	1.20	1.18	1.21	1.22	1.16	1.22	1.23	1.21	1.21
Naringin	1.09	11.85	2.29	2.03	5.62	1.99	1.12	0.16	1.59	4.17	1.39	6.94	11.61	1.57	2.72

1 – refer to the table 4. in article.

2 – S- standard, R- resistant, A- autocthtonous.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg.

Table S1. Continued

Tissue Year	Peel 2019															
Cultivar number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 ⁶
Type	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TPC	24.69	22.57	18.46	28.78	41.62	20.47	24.95	25.26	27.77	21.16	28.66	21.47	28.70	10.61	24.33	15.24
RSA	43.80	98.13	40.19	46.76	38.10	36.00	124.55	43.40	112.90	35.21	48.97	38.88	54.05	23.48	42.85	28.46
5-O-Caffeoylquinic acid⁵	15.47	60.17	16.46	24.38	67.36	94.21	67.08	50.20	128.06	89.73	121.61	127.79	94.35	1.37	82.14	74.63
Caffeic acid	0.07	0.51	0.34	0.30	0.46	0.35	1.49	0.24	1.04	0.85	1.16	0.93	0.32	0.08	0.71	0.46
Phloretin	0.84	1.40	0.47	1.51	3.51	1.22	1.14	0.91	1.57	3.26	0.36	1.67	0.84	0.20	3.88	0.33
Phlorizin	32.37	31.89	10.74	36.77	52.88	35.48	25.63	25.75	44.95	40.00	11.82	25.01	34.31	1.22	45.84	10.16
Quercetin	54.33	18.04	92.90	19.48	112.09	18.70	53.51	47.06	26.16	18.84	73.30	27.22	34.85	13.39	41.72	12.17
Rutin	63.71	20.06	19.36	98.76	19.62	45.39	67.03	134.38	61.36	57.98	167.03	62.38	46.11	4.30	44.22	36.04
Quercetin-3-O-glucoside	183.65	80.28	173.74	153.35	172.96	117.30	193.38	209.13	125.08	139.46	224.54	123.87	226.27	64.85	141.76	85.73
Quercetin-3-O-rhamnoside	54.16	16.13	57.65	49.84	77.79	17.31	52.86	54.38	22.08	29.94	47.81	14.37	75.22	11.12	41.29	19.66
Isorhamnetin-3-O-glucoside	22.63	4.86	18.82	11.77	44.99	6.58	74.46	17.20	7.77	11.34	19.38	7.17	36.32	7.51	13.77	7.39
Kaempferol	1.33	0.57	1.23	0.95	1.06	0.51	0.76	0.97	0.65	0.82	1.46	0.91	0.65	0.53	1.01	0.61
Naringenin	0.55	0.22	0.19	0.26	0.70	0.19	0.68	0.45	0.40	0.65	0.16	0.69	0.39	0.07	0.75	0.08
Protocatechuic acid	1.49	1.46	1.50	1.51	1.49	1.49	1.51	1.52	1.51	1.49	1.49	1.48	1.47	1.45	1.42	1.48
p-Hydroxybenzoic acid	0.98	0.96	0.99	0.99	0.98	0.98	0.99	1.00	0.99	0.98	0.98	0.97	0.97	0.95	0.93	0.97
Catechin	1.81	1.77	1.82	1.83	1.80	1.81	1.82	1.84	1.83	1.81	1.81	1.79	1.78	1.75	1.72	1.79
p-Coumaric acid	0.44	0.43	0.44	0.44	0.43	0.44	0.44	0.44	0.44	0.44	0.44	0.43	0.43	0.42	0.42	0.43
Isorhamnetin-3-O-rutinoside	1.18	1.15	1.18	1.19	1.17	1.17	1.18	1.20	1.19	1.17	1.17	1.17	1.16	1.14	1.12	1.17
Ferulic acid	1.70	1.66	1.71	1.72	1.69	1.69	1.71	1.73	1.71	1.70	1.70	1.68	1.67	1.64	1.61	1.68
Kaempferol-7-O-glucoside	1.62	1.59	1.63	1.65	1.62	1.62	1.64	1.65	1.64	1.62	1.62	1.61	1.60	1.57	1.54	1.61
Apigenin	1.02	0.03	0.08	0.03	0.10	0.02	0.30	1.04	0.12	1.02	0.05	0.25	0.15	0.03	0.97	1.01
Luteolin	0.84	0.82	0.84	0.85	0.83	0.83	0.84	0.85	0.84	0.83	0.83	0.83	0.82	0.81	0.79	0.83
Eriodictyol	0.11	0.03	0.14	0.11	0.22	0.05	0.23	0.09	0.09	0.12	0.11	0.11	0.08	0.05	0.30	0.04
Gallic acid	1.21	1.19	1.22	1.23	1.21	1.21	1.22	1.24	1.23	1.21	1.21	1.20	1.20	1.18	1.16	1.21
Naringin	1.81	7.48	2.33	8.33	7.42	11.37	5.13	5.64	12.48	6.29	2.90	9.13	5.14	0.22	5.70	3.15

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthtonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

6 – sample unavvaible in 2018.

Table S1. Continued

Tissue	Leaves															
Year	2018															
Cultivar number ¹	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type ²	S	S	S	S	S	R	R	R	R	R	R	A	A	A	A	A
TPC ³	67.49	81.48	64.79	88.62	80.11	75.73	74.33	64.11	64.12	74.83	78.15	73.30	82.82	61.33	61.46	17.72
RSA ⁴	7.97	11.85	10.54	7.56	9.63	11.77	7.77	6.40	9.17	8.41	10.79	7.47	12.48	6.51	6.10	5.19
5-O-Caffeoylquinic acid ⁵	69.97	87.97	77.77	46.30	63.93	102.49	69.72	101.33	74.58	79.63	60.49	71.43	178.55	116.43	105.90	23.52
Caffeic acid	1.62	2.55	3.19	1.59	2.38	3.08	1.87	2.37	1.87	1.68	1.46	1.98	3.95	1.03	1.41	0.30
Phloretin	81.67	38.85	61.83	243.70	273.32	285.53	58.16	416.08	392.33	235.46	213.48	400.51	179.21	208.41	360.40	85.56
Phlorizin	199.54	204.38	210.17	250.09	248.42	193.46	209.69	220.43	224.70	217.87	218.77	248.26	230.83	229.96	247.17	165.42
Quercetin	19.81	30.47	31.69	33.66	22.10	32.09	12.46	44.51	37.22	23.08	29.96	24.94	26.66	16.44	27.33	19.73
Rutin	54.80	127.08	82.18	107.59	82.98	115.36	64.08	81.14	90.62	70.31	67.29	67.40	155.58	62.05	146.33	58.48
Quercetin-3-O-glucoside	305.18	369.76	371.53	374.11	354.41	334.67	319.32	383.49	331.67	320.93	295.91	317.13	386.58	327.65	338.94	197.56
Quercetin-3-O-rhamnoside	177.11	254.60	216.40	246.63	216.21	254.79	194.56	247.87	312.50	294.45	197.15	123.18	222.76	158.18	202.10	105.73
Isorhamnetin-3-O-glucoside	6.48	6.60	6.42	6.25	6.61	6.07	6.66	6.71	6.68	6.22	6.39	6.38	6.63	6.46	6.54	6.25
Kaempferol	1.61	3.30	2.71	2.06	2.50	3.34	1.69	3.91	4.12	2.63	3.01	0.95	2.09	1.66	3.64	1.99
Naringenin	13.97	5.87	9.83	43.66	45.19	51.53	9.75	74.58	70.05	41.03	37.02	71.53	31.94	37.36	63.96	13.91
Protocatechuic acid	6.98	4.24	3.46	3.30	3.61	6.08	6.40	5.00	4.94	5.27	6.41	8.48	7.73	5.99	4.64	3.16
<i>p</i> -Hydroxybenzoic acid	0.84	1.16	0.89	0.37	0.47	1.77	2.20	0.71	0.68	1.05	0.13	1.18	2.13	1.71	2.01	0.41
Catechin	2.78	2.83	2.76	2.68	2.83	2.61	2.86	2.88	2.87	2.67	2.74	2.74	2.84	2.77	2.81	2.68
<i>p</i> -Coumaric acid	1.27	1.94	1.52	2.66	2.05	1.90	1.90	1.80	1.52	1.54	1.40	2.12	2.70	1.47	1.71	0.61
Isorhamnetin-3-O-rutinoside	1.81	1.84	1.79	1.74	1.84	1.69	1.86	1.87	1.86	1.73	1.78	1.78	1.85	1.80	1.82	1.74
Ferulic acid	2.61	2.66	2.59	2.52	2.66	2.44	2.68	2.70	2.69	2.50	2.57	2.57	2.67	2.60	2.63	2.52
Kaempferol-7-O-glucoside	2.49	2.54	2.47	2.41	2.54	2.34	2.56	2.58	2.57	2.40	2.46	2.46	2.55	2.49	2.52	2.41
Apigenin	0.14	0.09	0.14	0.19	0.20	0.29	0.10	0.44	0.39	0.19	0.27	0.26	0.14	0.18	0.24	0.10
Luteolin	2.92	2.28	2.22	1.44	2.44	4.17	2.82	5.32	4.45	3.25	6.42	4.14	1.72	1.46	3.95	0.89
Eriodictyol	2.31	2.35	2.29	2.23	2.36	2.17	2.37	2.39	2.38	2.22	2.28	2.28	2.36	2.30	2.33	2.23
Gallic acid	0.96	0.56	0.33	0.17	0.37	0.80	0.93	0.47	0.46	0.56	0.80	1.18	0.94	0.61	0.33	0.22
Naringin	1.45	1.47	1.44	1.40	1.48	1.36	1.49	1.50	1.49	1.39	1.43	1.43	1.48	1.44	1.46	1.40

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthtonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue Year	Leaves 2018																
	Cultivar number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Type	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TPC	17.72	71.47	76.08	80.27	74.85	74.78	78.97	47.51	79.92	80.48	62.65	65.22	74.37	56.85	87.86	73.03	
RSA	5.19	9.29	8.40	8.70	8.59	10.13	8.49	5.06	11.51	8.98	6.62	8.15	8.08	6.52	12.69	6.38	
5-O-Caffeoylquinic acid ⁵	23.52	105.99	168.18	175.81	56.20	122.64	157.90	94.25	44.75	145.69	132.38	80.78	184.12	159.70	104.65	143.92	
Caffeic acid	0.30	1.81	4.85	3.40	4.21	2.33	3.25	0.75	3.57	4.49	2.36	2.17	2.85	2.47	2.55	1.64	
Phloretin	85.56	148.19	178.15	228.82	655.07	238.57	202.48	240.48	320.92	209.66	215.30	287.57	199.46	213.93	266.58	186.21	
Phlorizin	165.42	232.89	218.39	222.56	211.29	232.89	222.65	224.53	226.29	225.23	257.46	245.26	227.80	222.09	243.40	224.66	
Quercetin	19.73	25.78	31.86	33.00	34.44	28.91	22.12	5.68	27.64	31.55	20.08	24.60	23.82	17.97	30.60	39.96	
Rutin	58.48	77.08	141.80	172.23	72.02	75.62	145.62	31.68	54.40	158.64	95.33	132.07	162.45	37.69	83.44	138.70	
Quercetin-3-O-glucoside	197.56	355.79	365.05	393.66	283.18	352.27	361.37	229.37	294.31	368.24	307.67	332.53	393.51	270.42	342.72	325.62	
Quercetin-3-O-rhamnoside	105.73	173.48	225.15	241.02	180.33	162.53	234.54	89.10	212.36	254.42	137.11	184.13	240.26	120.73	232.45	179.48	
Isorhamnetin-3-O-glucoside	6.25	6.68	6.18	6.31	6.10	6.49	6.24	6.69	6.39	6.47	6.62	6.71	6.44	6.45	6.22	6.05	
Kaempferol	1.99	1.74	2.16	2.13	3.58	1.29	1.71	0.90	2.25	2.82	1.58	2.16	1.85	1.42	2.63	2.50	
Naringenin	13.91	25.56	31.47	39.20	117.72	41.83	34.78	42.53	56.49	35.74	37.19	50.88	35.01	36.76	46.61	31.99	
Protocatechuic acid	3.16	6.19	8.91	7.18	8.47	4.50	10.58	6.12	9.81	8.49	12.97	5.43	8.17	6.02	3.65	4.91	
<i>p</i> -Hydroxybenzoic acid	0.41	1.20	2.97	2.07	2.67	1.48	3.73	1.45	1.40	2.42	2.04	2.08	2.59	1.11	1.93	1.25	
Catechin	2.68	2.86	2.65	2.71	2.62	2.78	2.68	2.87	2.74	2.77	2.84	2.88	2.76	2.77	2.67	2.60	
<i>p</i> -Coumaric acid	0.61	1.46	2.75	2.97	3.51	3.85	2.80	1.72	4.47	4.76	2.54	2.08	2.48	1.97	2.17	1.75	
Isorhamnetin-3-O-rutinoside	1.74	1.86	1.72	1.76	1.70	1.81	1.74	1.87	1.78	1.80	1.85	1.87	1.80	1.80	1.74	1.69	
Ferulic acid	2.52	2.69	2.49	2.54	2.45	2.61	2.51	2.69	2.57	2.60	2.67	2.70	2.59	2.60	2.50	2.44	
Kaempferol-7-O-glucoside	2.41	2.57	2.38	2.43	2.35	2.50	2.40	2.58	2.46	2.49	2.55	2.58	2.48	2.49	2.40	2.33	
Apigenin	0.10	0.14	0.16	0.17	0.39	0.19	0.17	0.24	0.23	0.16	0.22	0.22	0.19	0.19	0.21	0.21	
Luteolin	0.89	2.17	2.55	2.30	6.65	2.40	2.40	1.78	3.96	3.23	2.16	2.75	1.98	2.04	2.30	3.07	
Eriodictyol	2.23	2.38	2.20	2.25	2.18	2.31	2.23	2.39	2.28	2.31	2.36	2.39	2.30	2.30	2.22	2.16	
Gallic acid	0.22	0.53	1.41	0.77	1.28	0.49	2.23	0.93	1.20	1.05	1.88	0.44	1.00	0.79	0.35	0.37	
Naringin	1.40	1.49	1.38	1.41	1.36	1.45	1.39	1.49	1.43	1.44	1.48	1.50	1.44	1.44	1.39	1.35	

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S1. Continued

Tissue	Leaves														
Year	2019														
Cultivar number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type	S	S	S	S	S	R	R	R	R	R	R	A	A	A	A
TPC	99.11	104.32	92.19	104.61	97.69	93.21	88.89	80.14	104.32	97.56	87.28	91.59	83.93	88.64	73.83
RSA	9.26	13.62	14.04	11.10	8.28	13.68	9.68	10.15	11.02	12.59	12.00	9.24	9.32	8.89	7.64
5-O-Caffeoylquinic acid ⁵	112.33	72.55	97.00	70.45	59.14	78.24	89.20	103.18	72.44	75.41	43.34	132.30	200.04	242.98	116.82
Caffeic acid	1.88	2.16	2.06	2.24	0.67	3.96	2.80	2.91	1.34	2.72	0.92	0.70	1.39	0.63	0.08
Phloretin	188.52	51.72	126.03	90.88	140.59	497.00	105.71	597.85	220.90	122.93	161.32	269.55	135.03	213.52	242.57
Phlorizin	253.11	228.54	231.57	235.20	251.79	230.63	242.11	238.54	228.33	234.58	240.02	268.79	269.32	252.44	241.14
Quercetin	17.68	26.59	26.10	18.59	19.26	33.32	12.98	27.70	21.80	19.54	17.88	15.32	17.04	9.99	10.68
Rutin	92.10	159.94	115.69	122.18	81.83	144.17	138.99	97.31	98.87	80.60	86.36	84.34	125.94	60.74	216.52
Quercetin-3-O-glucoside	354.14	396.65	383.94	358.79	315.92	382.91	366.63	392.95	321.76	342.39	326.39	289.45	334.62	279.36	346.06
Quercetin-3-O-rhamnoside	173.90	243.92	200.04	207.81	200.54	274.48	191.40	253.26	283.70	325.70	190.68	104.11	218.95	116.53	203.14
Isorhamnetin-3-O-glucoside	6.11	6.62	6.05	6.10	6.34	6.25	6.59	6.43	6.51	6.65	6.71	6.15	6.61	6.47	6.14
Kaempferol	1.29	2.28	1.54	1.14	1.49	2.55	1.34	2.31	1.71	1.57	2.34	0.78	1.74	1.00	1.55
Naringenin	33.90	8.85	21.88	16.31	25.82	88.31	18.78	103.31	37.78	22.24	29.53	46.42	24.67	37.93	43.59
Protocatechuic acid	3.58	2.54	1.66	1.93	1.82	2.99	2.94	2.19	2.25	2.23	2.95	4.67	5.25	4.00	1.92
<i>p</i> -Hydroxybenzoic acid	0.77	0.36	0.61	0.11	0.09	1.38	0.24	0.90	0.27	0.07	0.14	2.63	0.96	1.39	0.27
Catechin	2.62	2.84	2.60	2.62	2.72	2.68	2.83	2.76	2.79	2.85	2.88	2.64	2.84	2.78	2.64
<i>p</i> -Coumaric acid	1.51	0.67	1.14	1.89	1.87	2.16	0.56	0.76	0.59	0.49	1.07	0.39	2.14	1.62	0.20
Isorhamnetin-3-O-rutinoside	1.70	1.85	1.69	1.70	1.77	1.74	1.84	1.79	1.81	1.85	1.87	1.71	1.84	1.80	1.71
Ferulic acid	2.46	2.66	2.44	2.45	2.55	2.51	2.65	2.59	2.62	2.67	2.70	2.47	2.66	2.60	2.47
Kaempferol-7-O-glucoside	2.35	2.55	2.33	2.35	2.44	2.41	2.54	2.48	2.51	2.56	2.58	2.37	2.54	2.49	2.37
Apigenin	0.12	0.10	0.10	0.08	0.08	0.38	0.10	0.35	0.18	0.13	0.20	0.13	0.07	0.14	0.14
Luteolin	2.14	1.96	1.68	1.90	1.87	4.05	2.46	3.55	3.08	3.61	6.34	2.09	0.87	1.42	1.16
Eriodictyol	2.18	2.36	2.16	2.18	2.26	2.23	2.35	2.29	2.32	2.37	2.39	2.19	2.36	2.31	2.19
Gallic acid	0.25	0.12	0.09	0.21	0.21	0.29	0.20	0.18	0.07	0.17	0.33	0.55	0.50	0.55	0.26
Naringin	1.37	1.48	1.35	1.36	1.42	1.40	1.47	1.44	1.45	1.49	1.50	1.37	1.48	1.45	1.37

1 – refer to the table 4. in article.

2 – S- standard, R- resistant, A- autocthtonous.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg.

Table S1. Continued

Tissue Year	Leaves 2019															
Cultivar number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Type	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
TPC	82.71	100.83	97.17	114.02	87.64	94.29	75.30	97.00	94.84	90.64	93.30	90.62	83.16	82.25	121.22	83.39
RSA	7.12	8.61	7.90	8.15	10.31	9.36	5.23	11.15	8.31	7.54	9.41	7.82	8.02	8.29	13.97	7.71
5- <i>O</i> -Caffeoylquinic acid ⁵	189.53	224.23	210.63	79.55	55.35	223.15	106.94	78.22	190.50	136.59	121.52	229.52	116.12	242.99	209.62	160.25
Caffeic acid	0.92	1.93	1.34	3.10	1.19	2.20	0.56	1.53	1.77	0.72	0.79	1.90	0.56	2.07	1.51	0.66
Phloretin	126.41	163.90	256.99	544.91	293.43	199.88	128.12	274.40	185.14	297.98	268.46	161.32	261.81	282.64	184.23	149.25
Phlorizin	240.02	266.35	264.01	272.20	251.33	252.47	262.87	247.11	248.61	265.01	280.90	264.56	233.19	253.84	290.45	269.54
Quercetin	7.25	19.52	10.60	18.80	14.26	15.26	3.85	10.76	12.66	14.35	13.87	13.06	19.12	12.59	15.35	5.80
Rutin	62.92	127.96	64.86	139.53	174.71	208.55	60.76	153.82	198.98	116.67	164.08	129.63	109.16	42.79	153.06	136.41
Quercetin-3- <i>O</i> -glucoside	286.96	351.21	311.45	307.52	354.91	390.78	247.85	340.41	365.74	286.16	320.22	358.97	351.30	260.74	378.47	310.27
Quercetin-3- <i>O</i> -rhamnoside	131.37	226.48	138.41	196.13	198.34	231.58	101.46	214.89	234.91	158.03	182.02	210.69	226.34	135.41	215.72	160.56
Isorhamnetin-3- <i>O</i> -glucoside	6.33	6.52	6.41	6.72	6.30	6.53	6.56	6.29	6.34	6.34	6.46	6.62	6.22	6.26	7.07	6.70
Kaempferol	1.04	1.61	0.89	1.27	0.75	1.32	0.94	1.44	1.17	1.67	2.12	1.68	2.28	1.66	1.58	1.40
Naringenin	22.62	29.44	46.52	98.54	51.25	34.15	22.56	48.41	32.64	53.14	48.59	28.57	46.33	49.35	33.64	25.81
Protocatechuic acid	3.59	5.09	2.46	4.96	5.34	4.41	3.01	3.97	3.82	6.84	2.80	5.26	1.62	4.44	3.78	3.28
<i>p</i> -Hydroxybenzoic acid	0.51	0.68	0.96	2.50	1.36	1.13	2.35	2.33	1.35	1.99	2.08	0.94	0.59	1.11	1.48	1.70
Catechin	2.71	2.80	2.75	2.88	2.70	2.80	2.82	2.70	2.72	2.72	2.77	2.84	2.67	2.69	3.03	2.88
<i>p</i> -Coumaric acid	1.26	1.96	1.65	4.27	1.36	0.93	0.39	2.36	2.89	2.07	1.67	2.57	1.43	2.00	2.16	1.86
Isorhamnetin-3- <i>O</i> -rutinoside	1.76	1.82	1.79	1.87	1.76	1.82	1.83	1.75	1.77	1.77	1.80	1.85	1.73	1.75	1.97	1.87
Ferulic acid	2.55	2.62	2.58	2.70	2.53	2.63	2.64	2.53	2.55	2.55	2.60	2.66	2.50	2.52	2.84	2.70
Kaempferol-7- <i>O</i> -glucoside	2.44	2.51	2.47	2.59	2.42	2.52	2.53	2.42	2.44	2.44	2.49	2.55	2.40	2.41	2.72	2.58
Apigenin	0.08	0.10	0.13	0.23	0.15	0.11	0.12	0.14	0.14	0.17	0.14	0.08	0.16	0.15	0.15	0.11
Luteolin	1.28	0.86	1.36	4.05	1.82	1.04	1.73	2.15	1.15	1.76	0.46	0.95	1.59	2.01	0.95	1.30
Eriodictyol	2.26	2.32	2.29	2.39	2.24	2.33	2.34	2.24	2.26	2.26	2.30	2.36	2.22	2.23	2.52	2.39
Gallic acid	0.41	0.63	0.27	0.63	0.70	0.41	0.28	0.58	0.52	0.81	0.33	0.65	0.04	0.53	0.59	0.27
Naringin	1.41	1.46	1.43	1.50	1.41	1.46	1.47	1.41	1.42	1.42	1.44	1.48	1.39	1.40	1.58	1.50

1 – refer to the table 4. in article (as a list of collected cultivars).

2 – S- standard, R- resistant, A- autocthtonous type of cultivar.

3 – expressed in g/kg equavilents gallic acid.

4 – expressed in mmol/kg trollox equavilents.

5 – expressed in mg/kg (all individual compounds presented in the table).

Table S2. Comparison of TPC values in different cultivar groups and years. Letters a-f denotes the grouping according to Tukey's HSD test at 0.95 confidence level.

Cultivar group	Sample	Range, year 2018 (mg/kg eq GA)	Range, year 2019 (mg/kg eq GA)
Standard	mesocarp	456 – 1413 ^{a,b}	100 – 734 ^{a,b}
	peel	3432 – 6508 ^{a,b}	9700 – 24892 ^c
	leaf	64794 – 88620 ^{d,f}	92191 – 104608 ^e
Resistant	mesocarp	333 – 640 ^{a,b}	125 – 703 ^{a,b}
	peel	3134 – 5444 ^{a,b}	7693 – 18368 ^{b,c}
	leaf	64117 – 78149 ^d	80136 – 104320 ^{e,f}
Autochthonous	mesocarp	737 – 4420 ^{a,b}	813 – 2591 ^a
	peel	4348 – 10591 ^{a,b}	18332 – 39054 ^c
	leaf	17724 – 87858 ^d	73834 – 121224 ^e

Table S3. Comparison of DPPH radical inhibition values in different cultivar groups and years. Letters a-d denotes the grouping according to Tukey's HSD test at 0.95 confidence level.

Cultivar group	Sample	Range, year 2018 ($\mu\text{mol/kg eq trolox}$)	Range, year 2019 ($\mu\text{mol/kg eq trolox}$)
Standard	mesocarp	8940 – 20969 ^{a,b,c}	7795 – 9644 ^{a,b}
	peel	29337 – 57636 ^{d,e}	23556 – 113338 ^{d,e}
	leaf	7557 – 11853 ^{a,b}	8282 – 14039 ^{a,b}
Resistant	mesocarp	7977 – 19732 ^{a,b}	7750 – 9579 ^{a,b}
	peel	26280 – 61208 ^{c,d,e}	21842 – 35450 ^{b,c,d}
	leaf	6403 – 11770 ^{a,b}	9683 – 11677 ^{a,b}
Autochthonous	mesocarp	8479 – 45523 ^{a,b}	6028 – 11912 ^{a,b}
	peel	29512 – 49346 ^{c,d,e}	23476 – 124545 ^{b,c,d}
	leaf	5056 – 12687 ^{a,b}	5231 – 12687 ^{a,b}

Table S4. Univariate test for significance of factor effects influencing total phenolic content (TPC) and DPPH radical scavenging activity (RSA) in the analysed samples. DF – Degrees of freedom; SS – Sum of squares; MS – Mean squares. Factors: F_1 – represents the three tissue types (mesocarp, peel and leaf), F_2 – describes the differences among the three apple cultivars (autochthonous, standard and resistant) and F_3 – is corresponding to the years of production.

Factor	DF	TPC				RSA			
		SS	MS	F	p	SS	MS	F	p
Intercept	1	1.35×10^{11}	1.35×10^{11}	2345.76	<0.001*	6.05×10^{10}	6.05×10^{10}	431.11	<0.001*
F_1	2	1.72×10^{11}	8.59×10^{10}	1495.48	<0.001*	2.73×10^{10}	1.37×10^{10}	97.35	<0.001*
F_2	2	2.09×10^8	1.04×10^8	1.82	0.166	6.26×10^8	3.13×10^8	2.23	0.111
F_3	1	4.77×10^9	4.77×10^9	82.92	<0.001*	1.03×10^8	1.03×10^8	0.74	0.392
$F_1 \times F_2$	4	6.88×10^8	1.72×10^8	2.99	0.020*	1.06×10^9	2.65×10^8	1.89	0.114
$F_2 \times F_3$	2	2.70×10^9	1.35×10^9	23.53	<0.001*	6.67×10^8	3.33×10^8	2.38	0.096
$F_2 \times F_3$	2	6.74×10^7	3.37×10^7	0.59	0.558	1.95×10^8	9.73×10^7	0.69	0.501
$F_1 \times F_2 \times F_3$	4	6.18×10^7	1.54×10^7	0.27	0.898	9.21×10^8	2.30×10^8	1.64	0.166

Statistically significant results at $p = 0.05$ are denoted with *

Table S5. Overview of detected compounds by OrbiTrap in mesocarp of the analyzed samples.

No	Compound name	Cultivar number ^{1,2}											
		2	3	9	11	12	13	14	15	16	17	18	19
1	Protocatechuic acid hexoside	+	+	+	+	+	+	+	+	+	+	+	+
2	Protocatechuic acid	+	+	+	+	+	+	+	+	+	+	+	+
3	Protocatechuic acid pentosylhexoside	+	-	+	-	-	-	+	+	+	-	+	+
4	Caffeoyl hexoside 1	+	+	+	-	+	+	+	-	-	+	+	+
5	<i>p</i> -Coumaric acid	+	+	+	-	+	+	-	-	+	+	+	+
6	Caffeoyl hexoside 2	+	+	+	-	-	+	+	+	+	+	+	+
7	Caffeoyl hexoside 3	+	+	+	+	+	+	+	+	+	+	+	+
8	5- <i>O</i> -Caffeoylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
9	<i>p</i> -Coumaric acid hexoside	+	+	+	+	+	+	+	+	+	+	+	+
10	5- <i>O</i> -Caffeoylquinic acid isomer	+	+	+	+	+	+	+	+	+	+	+	+
11	Methyl-3- <i>O</i> -caffeoylquinic acid	-	-	-	+	+	+	-	+	+	-	-	+
12	3- <i>p</i> -Coumaroylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
13	Methyl 5- <i>O</i> -caffeoylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
14	Caffeic acid	-	+	+	-	+	+	-	+	+	+	+	+
15	Methyl 3- <i>p</i> -coumaroylquinic acid	+	+	-	+	+	+	+	+	+	+	+	+
16	Methyl 5- <i>O</i> -caffeoylquinic acid isomer	+	+	+	+	+	+	+	+	+	+	+	+
17	Methyl 5- <i>p</i> -coumaroylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
18	Methyl 5- <i>p</i> -coumaroylquinic acid isomer	+	+	+	+	+	+	+	+	+	+	+	+
19	Rosmarinic acid	+	+	+	+	+	+	+	+	+	+	+	+
20	Caffeoyl-feruloylquinic acid	-	+	-	-	+	+	-	+	-	+	+	+
21	Prodelphinidin B type ((epi)gallocatechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
22	(Epi)catechin-hexoside	+	+	-	-	+	+	-	+	-	+	+	+
23	Procyanidin B type 1 (catechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
24	Epiafzelechin 3- <i>O</i> -gallate	+	+	+	+	+	-	+	+	+	+	+	+
25	Procyanidin B type 2 (catechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
26	Catechin	+	+	+	+	+	+	+	+	+	+	+	+
27	Procyanidin B type 3 (catechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
28	Epicatechin	+	+	+	+	+	+	+	+	+	+	+	+
29	(Epi)catechin-methyl(epi)gallocatechin	+	+	+	+	+	+	+	+	+	+	+	+
30	Taxifolin	+	+	-	-	+	+	+	-	+	+	+	+
31	Quercetin 3- <i>O</i> -rhamnoside	+	+	+	+	+	+	+	+	+	+	+	+
32	Kaempferol 3- <i>O</i> -pentoside	+	+	-	-	-	-	-	-	+	-	+	+
33	Kaempferol 3- <i>O</i> -rhamnoside	+	+	+	+	+	+	+	-	-	+	+	+
34	Phloretin 2'- <i>O</i> -(2''- <i>O</i> -pentosylhexoside)	+	+	+	+	+	+	+	+	+	+	+	+
35	Phloretin	+	+	+	+	+	+	+	+	+	+	+	+
36	Phloretin 2'- <i>O</i> -hexoside (Phloridzin)	+	+	+	+	+	+	+	+	+	+	+	+

1 – refer to the table 4. in article (as a list of collected cultivars)

2 – the detected compound is denoted with +, otherwise with -

Table S5. continued

No	Compound name	Cultivar number ^{1,2}											
		20	21	22	23	24	25	26	27	28	29	30	31
1	Protocatechuic acid hexoside	+	+	+	+	+	+	+	+	+	+	+	+
2	Protocatechuic acid	+	+	+	+	+	+	+	+	+	+	+	+
3	Protocatechuic acid pentosylhexoside	+	-	+	+	-	+	+	-	+	+	+	+
4	Caffeoyl hexoside 1	+	-	+	+	-	+	+	-	+	+	+	+
5	<i>p</i> -Coumaric acid	+	+	-	+	+	+	+	+	+	+	+	+
6	Caffeoyl hexoside 2	+	+	+	+	+	+	+	+	+	+	+	+
7	Caffeoyl hexoside 3	+	+	+	+	+	+	+	+	+	+	+	+
8	5- <i>O</i> -Caffeoylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
9	<i>p</i> -Coumaric acid hexoside	+	+	+	+	+	+	+	+	-	+	+	+
10	5- <i>O</i> -Caffeoylquinic acid isomer	+	+	+	+	+	+	+	+	+	+	+	+
11	Methyl-3- <i>O</i> -caffeoylquinic acid	-	-	-	-	-	-	+	-	-	-	-	-
12	3- <i>p</i> -Coumaroylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
13	Methyl 5- <i>O</i> -caffeoylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
14	Caffeic acid	+	+	-	+	+	+	+	+	+	+	+	+
15	Methyl 3- <i>p</i> -coumaroylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
16	Methyl 5- <i>O</i> -caffeoylquinic acid isomer	+	+	+	+	+	+	+	+	+	+	+	+
17	Methyl 5- <i>p</i> -coumaroylquinic acid	+	+	+	+	+	+	+	+	+	+	+	+
18	Methyl 5- <i>p</i> -coumaroylquinic acid isomer	+	+	+	+	+	+	+	+	+	+	+	+
19	Rosmarinic acid	+	+	+	+	+	+	+	+	+	+	-	+
20	Caffeoyl-feruloylquinic acid	+	+	-	+	+	+	+	+	-	+	-	+
21	Prodelphinidin B type ((epi)gallocatechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
22	(Epi)catechin-hexoside	+	+	-	+	+	+	+	+	+	+	+	+
23	Procyanidin B type 1 (catechin-(epi)catechin)	+	+	-	+	+	+	+	+	+	+	+	+
24	Epiarfaezelechin 3- <i>O</i> -gallate	+	+	+	+	+	+	+	+	+	+	+	+
25	Procyanidin B type 2 (catechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
26	Catechin	+	+	+	+	+	+	+	+	+	+	+	+
27	Procyanidin B type 3 (catechin-(epi)catechin)	+	+	+	+	+	+	+	+	+	+	+	+
28	Epicatechin	+	+	+	-	+	+	+	+	+	+	+	-
29	(Epi)catechin-methyl(epi)gallocatechin	+	+	+	+	+	+	+	+	+	+	+	+
30	Taxifolin	+	+	+	-	+	+	+	+	+	+	+	+
31	Quercetin 3- <i>O</i> -rhamnoside	+	+	+	+	+	+	+	+	+	+	+	+
32	Kaempferol 3- <i>O</i> -pentoside	-	-	-	+	-	+	+	-	-	+	+	+
33	Kaempferol 3- <i>O</i> -rhamnoside	+	-	+	+	-	+	+	+	-	+	+	+
34	Phloretin 2'- <i>O</i> -(2''- <i>O</i> -pentosylhexoside)	+	+	+	+	+	+	+	+	+	+	+	+
35	Phloretin	+	+	+	+	+	+	+	+	+	+	+	+
36	Phloretin 2'- <i>O</i> -hexoside (Phloridzin)	+	+	+	+	+	+	+	+	+	+	+	+

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