

Supplementary Material

Table S1. Results of the determination of the selenium content, Mal d 1 content, polyphenol oxidase activity, total phenolic content, and antioxidant activity in all apple samples. Data are given as mean value \pm standard deviation ($n = 4$; $n = 2$ for Mal d 1).

Variety and Year of Cultivation	Application*	Se [$\mu\text{g}/100 \text{ g f. w.}$]	Mal d 1 [$\mu\text{g}/100 \text{ g d. w.}$]	PPO [Units/ 100 g f. w.]	TPC [mg GAE/ 100 g d. w.]	TEAC [mmol TE/ 100 g d. w.]	ORAC [mmol TE/ 100 g d. w.]
'Fiesta' 2017	control (HS)	0.1 \pm 0.1	51.0 \pm 19.2	10.4 \pm 7.6	1,141.3 \pm 419.7	15.3 \pm 4.9	13.4 \pm 5.4
	0.1 kg selenite (HS)	3.1 \pm 1.5	68.8 \pm 18.7	1.9 \pm 0.3	838.5 \pm 273.0	11.1 \pm 2.6	4.6 \pm 1.8
	0.1 kg selenate (HS)	3.1 \pm 1.4	24.8 \pm 4.8	2.5 \pm 1.4	843.9 \pm 54.5	13.0 \pm 0.6	9.5 \pm 0.5
'Jonica' 2017	control (HS)	0.7 \pm 0.2	43.1 \pm 4.5	3.2 \pm 1.7	735.6 \pm 66.6	5.5 \pm 0.5	11.2 \pm 1.4
	0.15 kg selenite (HS)	13.9 \pm 1.3	37.3 \pm 8.9	5.5 \pm 3.0	843.0 \pm 169.2	5.7 \pm 0.9	14.1 \pm 1.2
'Golden Delicious' 2017	control (HS)	0.4 \pm 0.2	44.5 \pm 3.2	12.0 \pm 2.2	863.8 \pm 123.8	6.8 \pm 1.1	5.4 \pm 1.6
	0.15 kg selenite (HS)	5.6 \pm 0.5	36.5 \pm 3.9	18.5 \pm 2.8	797.9 \pm 44.7	6.0 \pm 0.3	1.9 \pm 1.1
	0.15 kg selenate (HS)	5.6 \pm 0.8	35.0 \pm 3.2	24.5 \pm 9.5	851.4 \pm 14.9	7.6 \pm 1.6	6.0 \pm 1.4
'Jonagold' 2017	control (HS)	0.4 \pm 0.2	107.5 \pm 4.9	2.4 \pm 0.7	938.2 \pm 78.0	7.4 \pm 0.9	11.0 \pm 2.2
	0.15 kg selenite (HS)	5.6 \pm 1.2	24.1 \pm 4.2	4.1 \pm 1.5	956.5 \pm 36.7	11.0 \pm 3.9	7.2 \pm 1.2
	0.15 kg selenate (HS)	4.5 \pm 1.6	53.3 \pm 19.0	5.8 \pm 5.2	893.8 \pm 74.0	13.3 \pm 1.3	9.5 \pm 1.3
'Golden Delicious' 2018	control (BS)	0.3 \pm 0.0	40.3 \pm 5.7	142.3 \pm 34.9	1,212.2 \pm 164.3	12.1 \pm 0.8	14.2 \pm 1.5
	0.075 kg selenate (BS)	3.7 \pm 0.4	29.9 \pm 4.0	61.1 \pm 17.5	1,206.9 \pm 226.4	10.7 \pm 1.1	8.8 \pm 3.0
'Jonagold' 2018	control (BS)	0.2 \pm 0.0	25.9 \pm 3.5	33.5 \pm 6.9	900.1 \pm 136.4	11.2 \pm 2.8	8.1 \pm 1.2
	0.075 kg selenate (BS)	2.1 \pm 0.7	39.0 \pm 5.7	42.4 \pm 35.0	815.4 \pm 103.5	11.4 \pm 0.8	15.5 \pm 1.2
'Boskoop' 2018	control (OS)	0.4 \pm 0.1	43.1 \pm 6.5	41.8 \pm 10.5	745.2 \pm 66.1	15.6 \pm 2.4	17.0 \pm 7.1
	0.075 kg selenate (OS)	5.3 \pm 0.3	30.9 \pm 0.1	18.8 \pm 4.7	743.5 \pm 51.3	16.5 \pm 3.4	14.7 \pm 0.9
'Jonica' 2018	control (OS)	0.3 \pm 0.1	38.0 \pm 7.7	11.4 \pm 9.2	785.1 \pm 177.3	12.8 \pm 1.8	8.9 \pm 1.5
	0.075 kg selenate (OS)	3.9 \pm 0.7	32.6 \pm 5.2	3.8 \pm 1.5	841.7 \pm 106.7	11.8 \pm 1.6	5.6 \pm 0.9
'Elstar' 2019	control (OS)	0.6 \pm 0.0	46.9 \pm 1.0	3.8 \pm 0.8	828.1 \pm 48.0	7.0 \pm 0.3	14.1 \pm 1.0
	0.15 kg selenate (OS)	8.7 \pm 1.4	39.0 \pm 3.3	35.5 \pm 8.9	750.7 \pm 121.4	5.7 \pm 0.5	14.4 \pm 0.5
	0.45 kg selenate (OS)	23.2 \pm 2.7	53.4 \pm 13.6	3.6 \pm 1.1	902.7 \pm 26.8	7.0 \pm 0.2	12.3 \pm 1.0

* Foliar spray rate of selenium per hectare and meter canopy height applied with a hand-held sprayer (HS), a backpack sprayer (BS) or a trailed orchard sprayer (OS).

Table S2. Results of the determination of phenolic compounds using HPLC-MSⁿ. Data are in average \pm standard deviation. The total phenolic content in mg/100 g d. w. was calculated by the sum of all quantitative determined phenolic compounds. For the four main phenolic compounds the content in mg/100 g d. w. and the percentage share is given (n = 4). Phloretin glycosides and Quercetin glycosides were summed up, respectively.

Variety and Year of Cultivation	Application*	Σ [mg/100 g d.w.]	Chlorogenic acid [mg/100 g d.w.]	%	Epicatechin [mg/100 g d.w.]	%	Procyanidin Trimer [mg/100 g d.w.]	%	Caffeoyl-glucoside [mg/100 g d.w.]	%	Σ Phloretin glycosides	%	Σ Quercetin glycosides	%
'Fiesta' 2017	control (HS)	166.18 \pm 48.57	66.43 \pm 19.90	39.9	22.47 \pm 2.28	14.7	15.51 \pm 0.49	10.0	5.16 \pm 0.26	3.3	13.01 \pm 1.66	8.2	42.18 \pm 31.01	22.9
	0.1 kg selenite (HS)	118.72 \pm 23.16	50.13 \pm 15.05	41.5	14.00 \pm 4.38	11.6	11.81 \pm 5.65	9.6	5.09 \pm 0.11	4.4	9.28 \pm 1.14	8.1	26.98 \pm 1.77	23.5
	0.1 kg selenate (HS)	139.57 \pm 11.16	56.83 \pm 2.78	40.8	11.00 \pm 0.57	7.9	12.35 \pm 1.24	8.9	5.06 \pm 0.28	3.6	12.24 \pm 1.87	8.7	40.72 \pm 7.41	29.0
'Jonica' 2017	control (HS)	77.77 \pm 3.37	20.64 \pm 2.58	26.5	7.12 \pm 1.95	9.1	8.63 \pm 0.64	11.1	5.23 \pm 0.25	6.7	10.92 \pm 0.61	14.0	23.81 \pm 1.63	30.7
	0.15 kg selenite (HS)	96.94 \pm 24.87	20.75 \pm 2.85	21.9	7.11 \pm 2.53	7.2	10.23 \pm 1.12	10.9	5.24 \pm 0.20	5.7	14.47 \pm 5.13	14.7	37.72 \pm 13.76	38.1
'Golden Delicious' 2017	control (HS)	123.14 \pm 16.54	33.65 \pm 3.92	27.4	11.86 \pm 2.32	9.6	9.34 \pm 2.33	7.5	14.81 \pm 0.41	12.2	17.00 \pm 5.37	14.1	35.09 \pm 10.44	28.1
	0.15 kg selenite (HS)	144.19 \pm 23.99	33.48 \pm 0.29	23.7	14.98 \pm 1.63	10.5	10.27 \pm 1.29	7.2	13.88 \pm 1.03	9.9	16.86 \pm 2.92	11.7	53.33 \pm 18.66	36.1
	0.15 kg selenate (HS)	127.35 \pm 17.63	32.59 \pm 2.78	25.8	12.89 \pm 2.32	10.1	8.46 \pm 1.67	6.6	13.42 \pm 1.64	10.6	16.04 \pm 1.65	12.6	42.57 \pm 9.68	33.2
'Jonagold' 2017	control (HS)	137.76 \pm 20.98	28.36 \pm 3.77	21.2	13.19 \pm 2.40	9.6	14.42 \pm 2.40	10.4	4.99 \pm 0.12	3.7	16.74 \pm 3.34	12.1	58.69 \pm 16.61	42.0
	0.15 kg selenite (HS)	131.90 \pm 16.66	30.20 \pm 5.48	23.4	14.75 \pm 3.46	11.2	11.45 \pm 1.24	8.7	8.28 \pm 3.79	6.3	19.63 \pm 6.25	14.7	46.20 \pm 12.20	34.7
	0.15 kg selenate (HS)	134.09 \pm 6.74	31.25 \pm 3.09	23.3	13.04 \pm 2.37	9.7	11.14 \pm 1.89	8.3	8.90 \pm 4.57	6.7	18.96 \pm 0.29	14.2	49.37 \pm 6.07	36.8

* Foliar spray rate of selenium per hectare and meter canopy height applied with a hand-held sprayer (HS)