

# Growth Hormones in Broad Bean (*Vicia faba* L.) and Radish (*Raphanus raphanistrum* subsp. *sativus* L.) Are Associated with Accumulated Concentrations of Perfluoroalkyl Substances

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**Supplementary materials**

**Table S1.** Mean PFAS concentration ( $\pm$  standard deviation) in ng/g dw in the spiked soil.  $n = 3$ .

PFAS	Concentrations (ng/g dw)
PFBA	$8.07 \pm 0.598$
PFPeA	$7.29 \pm 0.434$
PFHxA	$8.84 \pm 0.721$
PFHpA	$10.5 \pm 1.09$
PFOA	$8.24 \pm 0.584$
PFNA	$7.70 \pm 0.311$
PFDA	$5.91 \pm 0.400$
PFUnDA	$6.63 \pm 0.696$
PFDoDA	$7.54 \pm 0.882$
PFTTrDA	$6.87 \pm 0.543$
PFTeDA	$6.49 \pm 0.385$
PFBS	$6.77 \pm 0.857$
PFHxS	$10.8 \pm 1.23$
PFOS	$6.85 \pm 0.426$
FBSA	$6.18 \pm 0.577$

**Table S2.** Limits of quantification (LOQ) of the individual PFAS in plant matrices (ng/g dw).

PFAS	LOQ (ng/g dw)
PFBA	1.26
PFPeA	0.432
PFHxA	0.792
PFHpA	0.625
PFOA	0.143
PFNA	0.106
PFDA	0.223
PFUnDA	0.182
PFDoDA	0.305
PFTTrDA	0.114
PFTeDA	0.257
PFBS	1.55
PFHxS	1.90
PFOS	0.0631
FBSA	0.206

**Table S3.** MRM transitions, internal standards (ISTDs), cone voltages (V), and collision energy (eV) for the target perfluoroalkyl substances and their internal standards. Table adopted from Groffen et al. [46].

Compound	Precursor ion (m/z)	Product Ion (m/z)		Cone Voltage (V) for Diagnostic Transition 1	Cone Voltage (V) for Diagnostic Transition 2	Collision Energy (eV) for Diagnostic Transition 1	Collision Energy (eV) for Diagnostic Transition 2	Internal Standard (ISTD) Used for Quantification
		Diagnostic Product Ion 1	Diagnostic Product Ion 2					
		1	2					
PFBA	213	169	169	19	19	19	50	<sup>13</sup> C <sub>4</sub> -PFBA
PFPeA	263	219	219	15	15	10	45	<sup>13</sup> C <sub>4</sub> -PFBA
PFHxA	313	269	119	19	19	21	65	[1,2- <sup>13</sup> C <sub>2</sub> ]PFHxA
PFHpA	363	319	169	24	24	40	30	[1,2- <sup>13</sup> C <sub>2</sub> ]PFHxA
PFOA	413	369	169	22	22	13	60	[1,2,3,4- <sup>13</sup> C <sub>4</sub> ]PFOA
PFNA	463	419	169	28	28	17	20	[1,2,3,4,5- <sup>13</sup> C <sub>5</sub> ]PFNA
PFDA	513	469	219	25	25	29	29	[1,2- <sup>13</sup> C <sub>2</sub> ]PFDA
PFUnDA	563	519	169	18	18	30	35	[1,2- <sup>13</sup> C <sub>2</sub> ]PFUnDA
PFDoDA	613	569	319	22	22	21	30	[1,2- <sup>13</sup> C <sub>2</sub> ]PFDoDA
PFTTrDA	663	619	319	26	26	21	30	[1,2- <sup>13</sup> C <sub>2</sub> ]PFDoDA
PFTeDA	713	669	169	28	28	21	21	[1,2- <sup>13</sup> C <sub>2</sub> ]PFDoDA
PFBS	299	80	99	40	40	65	45	<sup>18</sup> O <sub>2</sub> -PFHxS
PFHxS	399	80	99	22	22	30	60	<sup>18</sup> O <sub>2</sub> -PFHxS
PFOS	499	80	99	60	60	58	58	[1,2,3,4- <sup>13</sup> C <sub>4</sub> ]PFOS
FBSA	298	219	78	34	40	27	38	<sup>13</sup> C <sub>4</sub> -PFBA
<sup>13</sup> C <sub>4</sub> -PFBA	217	172	172	19	19	19	50	
[1,2- <sup>13</sup> C <sub>2</sub> ]PFHxA	315	269	119	19	19	21	65	
[1,2,3,4- <sup>13</sup> C <sub>4</sub> ]PFOA	417	372	172	22	22	13	60	
[1,2,3,4,5- <sup>13</sup> C <sub>5</sub> ]PFNA	468	423	172	28	28	17	20	
[1,2- <sup>13</sup> C <sub>2</sub> ]PFDA	515	470	220	25	25	29	29	
[1,2- <sup>13</sup> C <sub>2</sub> ]PFUnDA	565	520	170	18	18	32	35	
[1,2- <sup>13</sup> C <sub>2</sub> ]PFDoDA	615	570	320	22	22	21	30	
<sup>18</sup> O <sub>2</sub> -PFHxS	403	84	103	22	22	30	60	
[1,2,3,4- <sup>13</sup> C <sub>4</sub> ]PFOS	503	80	99	60	60	58	58	

**Table S4.** PFAS concentrations (ng/g dw) and detection frequency (%) in the various tissues of exposed and control plants of *V. faba*. Values below LOQ are indicated as <LOQ. Ranges show minimum and maximum concentrations.

Tissue	Compound	Control			Exposed		
		Median	Range	Detection Frequency	Median	Range	Detection Frequency
Upper leaves ( <i>n</i> = 13 for control and <i>n</i> = 14 for exposed)	PFBA	<LOQ	<LOQ–<LOQ	0	32.3	13.9–72.2	100
	PFPeA	<LOQ	<LOQ–<LOQ	0	8.88	3.95–12.6	100
	PFHxA	<LOQ	<LOQ–<LOQ	0	4.00	1.78–6.49	100
	PFHpA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–2.38	7
	PFOA	1.23	0.333–2.00	100	1.84	0.880–3.21	100
	PFNA	<LOQ	<LOQ–0.224	8	<LOQ	<LOQ–<LOQ	0
	PFDA	1.07	0.752–1.62	100	1.46	0.687–2.36	100
	PFUnDA	0.501	<LOQ–0.688	85	<LOQ	<LOQ–0.770	36
	PFDoDA	1.38	<LOQ–1.82	85	1.72	<LOQ–4.64	86
	PFTTrDA	<LOQ	<LOQ–0.431	15	<LOQ	<LOQ–<LOQ	0
	PFTeDA	<LOQ	<LOQ–1.21	8	<LOQ	<LOQ–3.37	14
	PFBS	<LOQ	<LOQ–<LOQ	0	17.9	3.96–39.3	100
	PFHxS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	FBSA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
Lower leaves ( <i>n</i> = 15 for both treatments)	PFBA	<LOQ	<LOQ–<LOQ	0	34.5	<LOQ–72.0	87
	PFPeA	<LOQ	<LOQ–<LOQ	0	7.68	<LOQ–19.5	93
	PFHxA	<LOQ	<LOQ–<LOQ	0	5.17	<LOQ–9.66	93
	PFHpA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–3.31	33
	PFOA	1.64	1.11–6.85	100	1.18	0.571–3.54	100
	PFNA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFDA	1.26	<LOQ–2.54	93	1.35	<LOQ–2.51	93
	PFUnDA	<LOQ	<LOQ–0.774	33	<LOQ	<LOQ–0.786	27
	PFDoDA	1.50	<LOQ–6.03	63	1.36	<LOQ–2.35	87
	PFTTrDA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–0.381	7
	PFTeDA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFBS	<LOQ	<LOQ–<LOQ	0	40.6	<LOQ–69.7	93
	PFHxS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–0.191	7
	FBSA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
Stem ( <i>n</i> = 15 for both treatments)	PFBA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–22.0	53
	PFPeA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–5.41	27
	PFHxA	<LOQ	<LOQ–1.78	13	<LOQ	<LOQ–2.40	47
	PFHpA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOA	2.52	0.434–5.05	100	2.64	<LOQ–5.10	93
	PFNA	<LOQ	<LOQ–0.844	7	<LOQ	<LOQ–<LOQ	0
	PFDA	1.09	<LOQ–2.49	87	1.41	<LOQ–2.54	93
	PFUnDA	0.349	<LOQ–1.51	53	<LOQ	<LOQ–0.886	40
	PFDoDA	1.10	<LOQ–3.81	80	1.21	<LOQ–3.31	80
	PFTTrDA	<LOQ	<LOQ–7.00	7	<LOQ	<LOQ–<LOQ	0
	PFTeDA	<LOQ	<LOQ–4.42	7	<LOQ	<LOQ–<LOQ	0
	PFBS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFHxS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	FBSA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0

Flower ( <i>n</i> = 13 for control and <i>n</i> = 15 for exposed)	PFBA	<LOQ	<LOQ-<LOQ	0	17.8	4.07-78.5	100
	PFPeA	<LOQ	<LOQ-<LOQ	0	2.92	<LOQ-19.7	93
	PFHxA	<LOQ	<LOQ-9.25	7	2.26	<LOQ-10.8	87
	PFHpA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFOA	2.22	1.17-18.7	100	2.75	1.20-11.7	100
	PFNA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFDA	1.65	1.15-11.8	100	1.38	0.940-7.36	100
	PFUnDA	<LOQ	<LOQ-0.946	33	<LOQ	<LOQ-0.933	40
	PFDoDA	1.82	0.783-22.0	100	1.06	<LOQ-20.2	73
	PFTTrDA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFTeDA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFBS	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFHxS	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFOS	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	FBSA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
Apex ( <i>n</i> = 15 for both treatments)	PFBA	<LOQ	<LOQ-<LOQ	0	16.4	<LOQ-61.4	93
	PFPeA	<LOQ	<LOQ-<LOQ	0	2.67	<LOQ-7.48	93
	PFHxA	<LOQ	<LOQ-<LOQ	0	1.67	<LOQ-4.34	87
	PFHpA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFOA	1.05	0.425-2.08	100	1.32	0.736-3.62	100
	PFNA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFDA	1.17	0.864-1.89	100	1.40	0.837-6.00	100
	PFUnDA	0.369	<LOQ-0.771	53	<LOQ	<LOQ-0.567	47
	PFDoDA	0.957	<LOQ-2.24	80	1.12	<LOQ-11.7	80
	PFTTrDA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFTeDA	<LOQ	<LOQ-0.798	7	<LOQ	<LOQ-<LOQ	0
	PFBS	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFHxS	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	PFOS	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-<LOQ	0
	FBSA	<LOQ	<LOQ-<LOQ	0	<LOQ	<LOQ-2.32	13

**Table S5.** PFAS concentrations (ng/g dw) and detection frequency (%) in the various tissues of exposed and control plants of *R. raphanistrum*. Values below LOQ are indicated as <LOQ. Ranges show minimum and maximum concentrations.

Tissue	Compound	Control			Exposed		
		Median	Range	Detection Frequency	Median	Range	Detection Frequency
Leaf ( <i>n</i> = 15 for both treatments)	PFBA	<LOQ	<LOQ–16.1	7	32.5	<LOQ–59.7	87
	PFPeA	<LOQ	<LOQ–4.23	7	9.42	<LOQ–16.5	87
	PFHxA	<LOQ	<LOQ–3.38	7	6.07	<LOQ–13.9	87
	PFHpA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOA	1.73	<LOQ–3.12	93	1.33	0.400–4.45	100
	PFNA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFDA	1.24	0.579–1.89	100	1.36	0.710–2.25	100
	PFUnDA	<LOQ	<LOQ–0.544	40	0.357	<LOQ–0.709	60
	PFDoDA	1.11	<LOQ–1.72	80	1.21	0.758–4.64	100
	PFTTrDA	<LOQ	<LOQ–0.316	7	<LOQ	<LOQ–<LOQ	0
	PFTeDA	<LOQ	<LOQ–1.63	7	<LOQ	<LOQ–<LOQ	0
	PFBS	<LOQ	<LOQ–8.72	7	15.5	<LOQ–26.2	87
	PFHxS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOS	<LOQ	<LOQ–0.168	7	<LOQ	<LOQ–<LOQ	0
	FBSA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
Tuber ( <i>n</i> = 15 for both treatments)	PFBA	<LOQ	<LOQ–<LOQ	0	3.15	<LOQ–37.6	47
	PFPeA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–15.6	33
	PFHxA	<LOQ	<LOQ–2.85	7	<LOQ	<LOQ–6.09	40
	PFHpA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOA	3.00	1.14–6.17	100	0.817	<LOQ–3.31	93
	PFNA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–0.466	27
	PFDA	0.984	<LOQ–1.71	87	1.00	0.821–1.38	100
	PFUnDA	<LOQ	<LOQ–0.610	27	0.465	<LOQ–0.740	67
	PFDoDA	0.914	<LOQ–1.74	80	1.26	0.573–2.39	100
	PFTTrDA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–0.979	27
	PFTeDA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFBS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–27.3	33
	PFHxS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	FBSA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
Root ( <i>n</i> = 15 for both treatments)	PFBA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–4.92	20
	PFPeA	<LOQ	<LOQ–<LOQ	0	1.15	<LOQ–2.45	67
	PFHxA	<LOQ	<LOQ–1.91	7	2.98	<LOQ–5.79	93
	PFHpA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–3.79	13
	PFOA	0.774	<LOQ–1.50	80	3.31	1.96–6.85	100
	PFNA	<LOQ	<LOQ–0.250	7	1.29	0.894–2.52	100
	PFDA	1.05	0.549–2.08	100	2.13	1.30–3.61	100
	PFUnDA	0.425	<LOQ–0.808	60	0.687	<LOQ–1.24	87
	PFDoDA	0.907	<LOQ–3.10	93	2.10	<LOQ–3.04	93
	PFTTrDA	<LOQ	<LOQ–0.663	47	0.991	<LOQ–1.65	93
	PFTeDA	<LOQ	<LOQ–<LOQ	0	1.70	<LOQ–3.24	73
	PFBS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFHxS	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–<LOQ	0
	PFOS	<LOQ	<LOQ–0.583	40	0.327	<LOQ–0.679	80
	FBSA	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–4.44	27

**Table S6.** Translocation factors of PFAS in exposed *R. rapanistrum* (*n* = 15).

PFAS	Translocation Factor
PFPeA	6.94
PFHxA	1.68
PFOA	0.51
PFDA	0.56
PFUnDA	0.46
PFDoDA	0.67

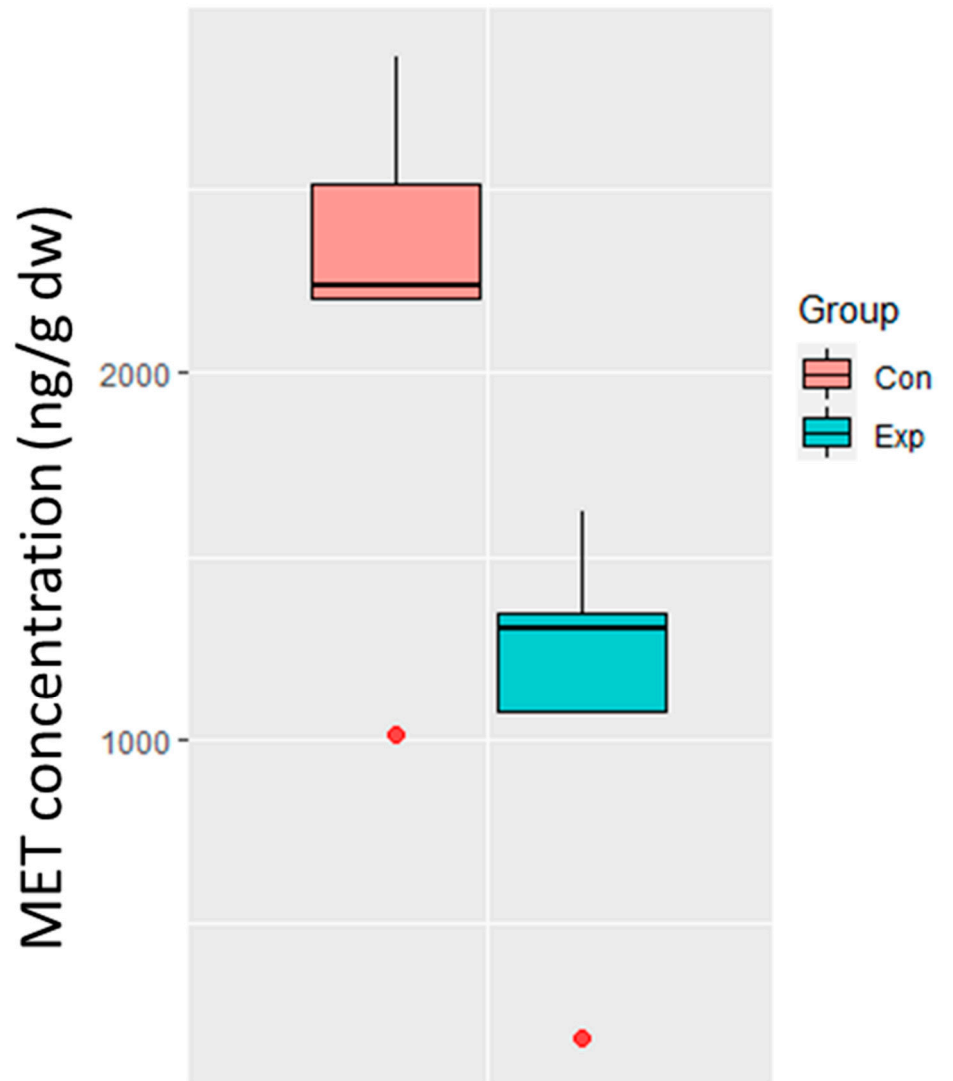
**Table S7.** Plant hormone levels (pmol/g dw) and detection frequency (%) in the upper leaves and apex of exposed and control plants of *V. faba*. Values below LOQ are indicated as <LOQ. Ranges show minimum and maximum concentrations. *n* = 5 per tissue for each of the treatments.

Tissue	Compound		Control			Exposed		
			Median	Range	Detection Frequency	Median	Range	Detection Frequency
Upper leaf	Cytokinines	Trans-ZR	<LOQ	<LOQ–39.3	40	<LOQ	<LOQ–15.3	40
		iPA	0.891	<LOQ–9.85	80	1.07	<LOQ–8.59	80
		ACC	28.8	26.4–39.0	100	27.8	19.0–46.9	100
	ACC	ACC-Conjugates	39.7	<LOQ–132	80	55.3	46.8–288	100
		IAA	34.6	14.1–90.9	100	17.1	10.6–43.9	100
	IAA	IAA-Conjugates	109	11.5–4029	100	82.3	<LOQ–95.9	80
		JA	82.5	<LOQ–404	60	70.1	<LOQ–333	80
	Gibberellins	GA1	24.9	6.83–68.8	100	33.1	11.2–103	100
		GA7	1248	679–3155	100	463	302–1936	100
		GA8	31.0	<LOQ–110	60	<LOQ	<LOQ–39.4	40
		GA12	1490	13.0–10,238	100	1254	7.96–9877	100
		GA15	1229	542–1425	100	666	534–1027	100
		GA19	62.0	20.8–186	100	68.1	46.3–113	100
		GA20	<LOQ	<LOQ–37.1	40	<LOQ	<LOQ–29.5	40
	MET	MET	446	231–840	100	298	211–651	100
	ABA	ABA	123	<LOQ–217	60	204	48.3–397	100
Apex	Cytokinines	Trans-ZR	207	<LOQ–437	80	286	<LOQ–1130	80
		IPA	167	2.29–976	100	81.9	1.56–243	100
		ACC	52.9	19.0–61.3	100	44.0	30.6–86.7	100
	ACC	Conjugates	60.1	<LOQ–190	80	51.8	41.9–107	100
		IAA	90.7	52.1–111	100	95.6	34.8–143	100
	IAA	Conjugates	219	<LOQ–405	80	19.4	<LOQ–495	60
		JA	60.2	<LOQ–164	80	5.48	0.465–80.3	100
	Gibberellins	GA1	49.6	28.2–114	100	11.9	4.89–60.1	100
		GA7	3018	1426–19,217	100	3123	1826–12,204	100
		GA8	73.4	<LOQ–662	80	137	<LOQ–190	80
		GA12	13,793	13.8–270,149	100	128,498	92.1–305,121	100
		GA15	2887	1863–5197	100	1804	1631–2783	100
		GA19	25.9	<LOQ–255	80	77.8	61.0–115	100
		GA20	66.7	41.1–875	100	94.2	25.7–182	100
	MET	MET	2235	1010–2856	100	1301	193–1619	100
	ABA	ABA	80.6	37.7–971	100	896	53.3–6643	100

**Table S8.** Plant hormone levels (pmol/g dw) and detection frequency (%) in the tubers and leaves of exposed and control plants of *R. raphanistrum*. Values below LOQ are indicated as <LOQ. Ranges show minimum and maximum concentrations. *n* = 5 per tissue for each of the treatments.

Tissue	Compound		Control			Exposed		
			Median	Range	Detection Frequency	Median	Range	Detection Frequency
Tuber	Cytokinines	Trans-ZR	<LOQ	<LOQ–5.83	40	1.47	<LOQ–9.76	60
		IPA	5.94	<LOQ–39.2	80	6.65	<LOQ–37.3	80
	ACC	ACC	90.4	<LOQ–365	80	816	90.3–1208	100
		Conjugates	283	<LOQ–915	60	816	<LOQ–1208	80
	IAA	IAA	10.8	7.89–34.4	100	73.7	10.1–3245	100
		Conjugates	0.0234	<LOQ–236	60	110	<LOQ–281	80
	JA	JA	<LOQ	<LOQ–0.0889	20	38.2	0.115–464	100
		GA1	10.2	7.53–43.2	100	12.9	<LOQ–37.4	60
	Gibberellins	GA7	257	172–463	100	255	<LOQ–411	80
		GA8	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ - <LOQ	0
		GA12	<LOQ	<LOQ–12.5	40	<LOQ	<LOQ–2621	20
		GA15	798	449–3113	100	1308	<LOQ–3203	80
		GA19	<LOQ	<LOQ–6.72	20	<LOQ	<LOQ–<LOQ	0
		GA20	9.86	<LOQ–14.3	80	10.9	<LOQ–16.9	80
	MET	MET	346	165–772	100	714	235–1562	100
	ABA	ABA	107	75.3–594	100	96.4	<LOQ–544	80
Leaves	Cytokinines	Trans-ZR	<LOQ	<LOQ–<LOQ	0	<LOQ	<LOQ–11.1	20
		IPA	<LOQ	<LOQ–5.21	40	<LOQ	<LOQ–2.65	40
	ACC	ACC	145	<LOQ–564	80	245	89.5–387	100
		Conjugates	244	<LOQ–680	60	379	<LOQ–571	80
	IAA	IAA	49.1	21.3–69.3	100	66.5	18.4–7606	100
		Conjugates	5196	<LOQ–74,403	80	2512	<LOQ–5218	80
	JA	JA	0.189	<LOQ–161	60	1.05	<LOQ–2405	80
		GA1	18.0	<LOQ–99.7	80	11.3	<LOQ–133	60
	Gibberellins	GA7	570	384–1472	100	254	<LOQ–419	80
		GA8	41.3	<LOQ–508	60	<LOQ	<LOQ–1396	20
		GA12	5.27	<LOQ–668	60	16.8	<LOQ–1666	60
		GA15	645	497–3337	100	446	<LOQ–3614	80
		GA19	<LOQ	<LOQ–11.4	40	<LOQ	<LOQ–10.4	40
		GA20	22.5	15.9–76.7	100	27.6	<LOQ–40.0	80
	MET	MET	314	245–539	100	347	166–775	100
	ABA	ABA	42.2	27.4–339	100	39.7	<LOQ–203	80





**Figure S1.** Comparison of methionine (MET) levels (ng/g dw) in the apex of exposed (blue) and control (red) plants of *V. faba* ( $n = 5$  per treatment).