Supporting Information for

UPTAKE OF PERFLUORINATED ALKYL ACIDS BY CROPS: RESULTS FROM A FIELD STUDY

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Table S1: List of chemicals used, their purity and suppliers.

Chemical	Purity	Supplier
MPFAC-Mix (internal standard)		Wellington Laboratories, Ontario, Canada
MPFAS-Mix (internal standard)		Wellington Laboratories, Ontario, Canada
M5PFPeA (internal standard)		Wellington Laboratories, Ontario, Canada
M4PFHpA (internal standard)		Wellington Laboratories, Ontario, Canada
PFAC-Mix (calibration standard)		Wellington Laboratories, Ontario, Canada
PFAS/FOSA-Mix (calibration standard)		Wellington Laboratories, Ontario, Canada
PFBA	98%	Sigma Aldrich, Zwijndrecht, Netherlands
PFPeA	97%	Sigma Aldrich, Zwijndrecht, Netherlands
PFHxA	≥97%	Sigma Aldrich, Zwijndrecht, Netherlands
PFHpA	99%	Sigma Aldrich, Zwijndrecht, Netherlands
PFOA	96%	Sigma Aldrich, Zwijndrecht, Netherlands
PFNA	97%	Sigma Aldrich, Zwijndrecht, Netherlands
PFDA	98%	Sigma Aldrich, Zwijndrecht, Netherlands
PFUnA	95%	Sigma Aldrich, Zwijndrecht, Netherlands
PFDoDA	95%	Sigma Aldrich, Zwijndrecht, Netherlands
PFTrDA	97%	Sigma Aldrich, Zwijndrecht, Netherlands
PFTeDA	97%	Sigma Aldrich, Zwijndrecht, Netherlands
K-PFBS	≥98%	Sigma Aldrich, Zwijndrecht, Netherlands
K-PFOS	≥98%[§]	Sigma Aldrich, Zwijndrecht, Netherlands
Ammonium acetate	≥99,999%	Sigma Aldrich, Zwijndrecht, Netherlands
Methanol	ULC/MS-grade	Biosolve, Valkenswaard, Netherlands
Water	ULC/MS-grade	Biosolve, Valkenswaard, Netherlands

[§] Mixture of linear and branched isomers.

Table S2: List of the analytes, their abbreviations and molecular formulas, the 13C-labelled internal standards used for their quantification, and the mass transitions used in the MS/MS analysis of the analytes.

Abbreviation	Compound	Transition 1	Transition 2	Quantification by internal Standard	Molecular Formula
PFBA	Perfluoro-n-butanoic acid	213 → 169	-	$^{13}C_4$ PFBA	$CF_3(CF_2)_2COOH$
PFPeA	Perfluoro-n-pentanoic acid	263 → 219	-	$^{13}C_5$ PFPeA	$CF_3(CF_2)_3COOH$
PFHxA	Perfluoro-n-hexanoic acid	313 → 269	313 → 119	$^{13}C_2$ PFHxA	$CF_3(CF_2)_4COOH$
PFHpA	Perfluoro-n-heptanoic acid	363 → 319	363 → 169	$^{13}C_4$ PFHpA	$CF_3(CF_2)_5COOH$
PFOA	Perfluoro-n-octanoic acid	413 → 369	413 → 169	$^{13}C_8$ PFOA	$CF_3(CF_2)_6COOH$
PFNA	Perfluoro-n-nonanoic acid	463 → 419	463 → 219	$^{13}C_9$ PFNA	$CF_3(CF_2)_7COOH$
PFDA	Perfluoro-n-decanoic acid	513 → 469	513 → 269	$^{13}C_6$ PFDA	$CF_3(CF_2)_8COOH$
PFUnA	Perfluoro-n-undecanoic acid	563 → 519	563 → 269	$^{13}C_7$ PFUnA	$CF_3(CF_2)_9COOH$
PFDoDA	Perfluoro-n-dodecanoic acid	613 → 569	613 → 319	$^{13}C_2$ PFDoDA	$CF_3(CF_2)_{10}COOH$
PFTrDA	Perfluoro-n-tridecanoic acid	663 → 619	663 → 369	$^{13}C_2$ PFDoDA	$CF_3(CF_2)_{11}COOH$
PFTeDA	Perfluoro-n-tetradecanoic acid	713 → 669	713 → 369	$^{13}C_2$ PFDoDA	$CF_3(CF_2)_{12}COOH$
PFBS	Perfluorobutane sulfonate	299 → 80	299 → 99	$^{18}O_2$ PFHxS	$CF_3(CF_2)_3SO_3$
PFOS	Perfluorooctane sulfonate	499 → 80	499 → 99	$^{13}C_8$ PFOS	$CF_3(CF_2)_7SO_3$
$^{13}C_4$ PFBA	Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid	217 → 172	-		
$^{13}C_5$ PFPeA	Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]pentanoic acid	268 → 223	-		
$^{13}C_2$ PFHxA	Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid	315 → 270	315 → 119		
$^{13}C_4$ PFHpA	Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid	367 → 323	367 → 169		
$^{13}C_8$ PFOA	Perfluoro-n-[1,2,3,4,5,6,7,8-$^{13}C_8$]octanoic acid	421 → 376	421 → 172		
$^{13}C_9$ PFNA	Perfluoro-n-[1,2,3,4,5,6,7,8,9-$^{13}C_9$]nonanoic acid	472 → 427	472 → 223		
$^{13}C_6$ PFDA	Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid	519 → 474	519 → 219		
$^{13}C_7$ PFUnA	Perfluoro-n-[1,2,3,4,5,6,7-$^{13}C_7$]undecanoic acid	570 → 525	570 → 270		
$^{13}C_2$ PFDoDA	Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid	615 → 570	615 → 369		
$^{18}O_2$ PFHxS	Perfluoro-1-hexane[$^{18}O_2$]sulfonate	403 → 84	403 → 103		
$^{13}C_8$ PFOS	Perfluoro-1-[1,2,3,4,5,6,7,8-$^{13}C_8$]octanesulfonate	507 → 80	507 → 99		

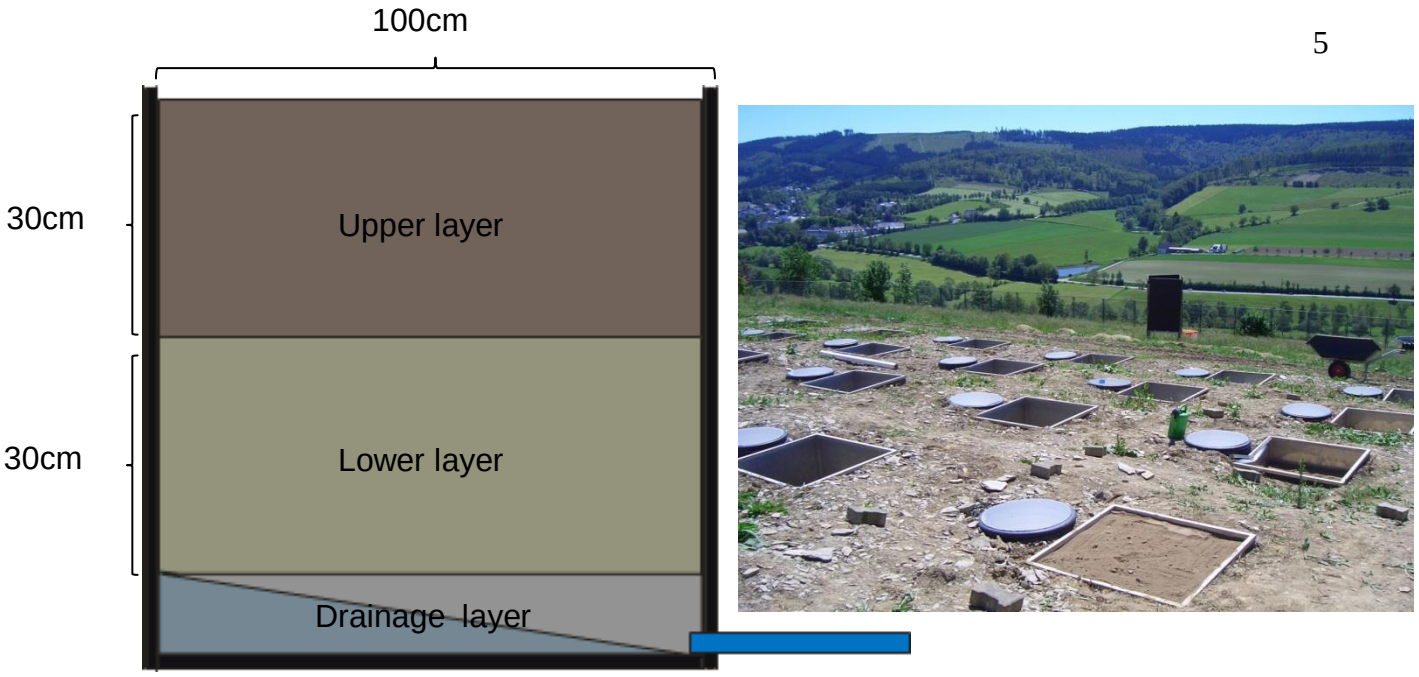


Figure S1: Lysimeter set-up at the Fraunhofer Institute for Molecular Biology and Applied Ecology in Schmallenberg, Germany

Table S3: Water inputs to the lysimeters (L per lysimeter)

Date	Precipitation	Watering radish	Watering lettuce	Watering pea	Watering maize
2011-06-21	2.8	5	5	5	5
2011-06-22	18.4				
2011-06-23	1.3				
2011-06-24	2.7				
2011-06-25	2.4				
2011-06-26	1.3				
2011-06-27	0				
2011-06-28	0				
2011-06-29	6.7				
2011-06-30	0.3				
2011-07-01	0.4				
2011-07-02	0				
2011-07-03	0				
2011-07-04	0				
2011-07-05	0		3		6
2011-07-06	0				3
2011-07-07	0	3	3	3	6
2011-07-08	4.8				
2011-07-09	0				
2011-07-10	0.1	3	3	3	6
2011-07-11	0				

2011-07-12	0	3	3	3	6
2011-07-13	1.9				
2011-07-14	0.7				
2011-07-15	2.8				
2011-07-16	0.8				
2011-07-17	13				
2011-07-18	2.9				
2011-07-19	0				
2011-07-20	2.6				
2011-07-21	18.9				
2011-07-22	0.1				
2011-07-23	0.5				
2011-07-24	11.5				
2011-07-25	3.1				

2011-07-26	12.5				
2011-07-27	13.7				
2011-07-28	21.6				
2011-07-29	0.1				
2011-07-30	0.5				
2011-07-31	0				
2011-08-01	0				
2011-08-02	0				
2011-08-03	15.3				
2011-08-04	4.4				
2011-08-05	0.8				
2011-08-06	7.4				
2011-08-07	0.6				
2011-08-08	15.1				
2011-08-09	8.2				
2011-08-10	0.2				
2011-08-11	0				
2011-08-12	11.5				
2011-08-13	6				
2011-08-14	12				
2011-08-15	0.1				
2011-08-16	0.3				
2011-08-17	0.1				
2011-08-18	28.9				
2011-08-19	2.4				
2011-08-20	0				
2011-08-21	2.1				
2011-08-22	1.3				
2011-08-23	0.5				
2011-08-24	0.6				
2011-08-25	0.1				
2011-08-26	11.8				
2011-08-27	9.6				
2011-08-28	1.6				
2011-08-29	0				
2011-08-30	0.1				
2011-08-31	0				

2011-09-01	0				
2011-09-02	0				
2011-09-03	0				
2011-09-04	16.7				
2011-09-05	0.5				
2011-09-06	1.2				
2011-09-07	6.6				
2011-09-08	17.4				
2011-09-09	0.3				
2011-09-10	0				
2011-09-11	10.4				
2011-09-12	0.1				
2011-09-13	0				
2011-09-14	0				
2011-09-15	0				
2011-09-16	0				
2011-09-17	0.2				
2011-09-18	1.6				
2011-09-19	0.2				
2011-09-20	0				
2011-09-21	0				
2011-09-22	0.1				
2011-09-23	0				
2011-09-24	0				
2011-09-25	0				

2011-09-26	0				
2011-09-27	0				
2011-09-28	0				
2011-09-29	0				
2011-09-30	0				
2011-10-01	0				
2011-10-02	0				
2011-10-03	0				
2011-10-04	0				
2011-10-05	0				
2011-10-06	5.2				
2011-10-07	8.5				
2011-10-08	2.5				
2011-10-09	2.3				
2011-10-10	3				
2011-10-11	12.3				
2011-10-12	19.2				
2011-10-13	0.1				
2011-10-14	0				
2011-10-15	0				
2011-10-16	0				
2011-10-17	0				
2011-10-18	2.5				
2011-10-19	4				

Table S4: Dates of the planting and harvesting.

Date	Action	Samples taken
21.06.2011	Start of experiment; Seeding radish and pea; Planting seedlings of maize and lettuce	Soil samples of the upper and lower layer of all spiked lysimeters, as well as from unspiked soil
09.08.2011	Harvest of radish	6 radishes per lysimeter were taken and divided into roots, bulbs and foliage. Surface soil samples of radish lysimeters were taken.
01.09.2011	Harvest of lettuce	4 lettuce plants were taken from each lysimeter and divided into roots and foliage. Soil samples from 2 different depths (0-15, 15-30, 30-45 and 45-60cm) were taken from each lettuce lysimeter. Porewater was extracted from each sub-sample.

04.10.2011	Harvest of pea	All pea plants from each lysimeter were sampled, samples of roots, stem, leaves, pods and peas were taken. Soil samples from 2 depths (0-15 and 15-30cm) were taken. No pore water could be extracted.
19.10.2011	Harvest of maize End of experiment	3 maize plants were sampled from each lysimeter, samples of roots, stem, leaves, cobs, kernels and hull-leaves were taken. Soil samples from 2 different depths (0-15, 15-30, 30-45 and 45-60cm) were taken from each maize lysimeter. Pore water was extracted from each subsample.

Table S5: Recoveries (in %) of internal mass-labeled standards. The recovery was determined in each sample by comparing the standard signal in the sample to the signal in matrix-free solutions which had been spiked with the same quantity of internal standard immediately prior to analysis. The quantity of standard employed varied with matrix and exposure level. The bold entries are the mean recoveries (in %), while the non-bold entries are the respective relative standard deviations.

		13C PFBA	13C PFPeA	13C PFHxA	13C PFHpA	13C PFOA	13C PFNA	13C PFDA	13C PFUnA	13C PFDoDA	18O PFHxS	13C PFOS
Soil		**103%** 13%	**91%** 12%	**92%** 10%	**94%** 9%	**92%** 6%	**93%** 11%	**106%** 8%	**109%** 12%	**112%** 13%	**105%** 4%	**101%** 9%
Radish	Root	**17%** 2%	**62%** 4%	**91%** 4%	**95%** 5%	**87%** 3%	**86%** 11%	**80%** 10%	**80%** 11%	**100%** 4%	**95%** 3%	**89%** 10%
	Bulb	**27%** 11%	**79%** 14%	**91%** 17%	**109%** 9%	**79%** 11%	**63%** 5%	**89%** 10%	**87%** 10%	**80%** 9%	**83%** 5%	**62%** 8%
	Foliage	**36%** 14%	**72%** 8%	**90%** 9%	**102%** 7%	**91%** 8%	**73%** 9%	**93%** 8%	**82%** 8%	**65%** 9%	**84%** 14%	**72%** 7%
Lettuce	Root	**23%** 8%	**75%** 10%	**98%** 9%	**81%** 10%	**67%** 6%	**86%** 10%	**58%** 10%	**50%** 9%	**85%** 6%	**102%** 14%	**43%** 7%
	Foliage	**22%** 9%	**95%** 13%	**71%** 12%	**71%** 14%	**63%** 14%	**50%** 13%	**58%** 13%	**53%** 14%	**91%** 14%	**94%** 10%	**52%** 15%
Pea	Root	**26%** 4%	**78%** 8%	**87%** 5%	**100%** 8%	**104%** 8%	**73%** 8%	**90%** 10%	**117%** 6%	**129%** 9%	**93%** 9%	**80%** 10%
	Stem	**19%** 4%	**85%** 9%	**95%** 10%	**104%** 8%	**104%** 11%	**81%** 10%	**102%** 10%	**103%** 12%	**110%** 9%	**99%** 11%	**78%** 12%
	Leaves	**8%** 1%	**45%** 2%	**120%** 19%	**93%** 3%	**95%** 9%	**61%** 7%	**79%** 12%	**83%** 16%	**79%** 16%	**91%** 3%	**61%** 6%
	Pods	**23%** 1%	**75%** 3%	**134%** 26%	**107%** 6%	**112%** 7%	**83%** 3%	**104%** 11%	**96%** 13%	**80%** 10%	**102%** 7%	**68%** 3%
	Peas	**20%** 2%	**71%** 3%	**102%** 11%	**94%** 13%	**99%** 10%	**67%** 8%	**105%** 10%	**108%** 10%	**86%** 10%	**82%** 10%	**72%** 8%
Maize	Root	**27%** 6%	**98%** 8%	**119%** 6%	**90%** 7%	**91%** 11%	**97%** 12%	**108%** 8%	**108%** 14%	**113%** 13%	**90%** 9%	**80%** 6%
	Stem	**23%** 6%	**89%** 11%	**114%** 6%	**106%** 10%	**97%** 11%	**78%** 11%	**99%** 14%	**90%** 10%	**95%** 9%	**89%** 7%	**72%** 10%
	Leaves	**14%** 1%	**49%** 7%	**89%** 6%	**98%** 7%	**87%** 7%	**61%** 11%	**94%** 15%	**100%** 10%	**81%** 10%	**71%** 10%	**71%** 11%
	Cobs	**42%** 5%	**107%** 8%	**137%** 6%	**93%** 7%	**96%** 9%	**102%** 8%	**98%** 11%	**89%** 8%	**101%** 10%	**93%** 6%	**89%** 12%
	Hull-Leaves	**35%** 11%	**96%** 10%	**123%** 7%	**95%** 11%	**93%** 10%	**85%** 9%	**87%** 8%	**80%** 6%	**80%** 9%	**94%** 11%	**79%** 10%
	Kernels	**22%** 2%	**92%** 7%	**96%** 14%	**67%** 9%	**75%** 9%	**84%** 10%	**96%** 6%	**92%** 8%	**86%** 7%	**85%** 8%	**78%** 7%

Table S6: Limits of Quantification (LoQ) in ng g^{-1} fresh weight (plant samples), in ng g^{-1} dry weight (soil) and ng mL^{-1} (pore water).

		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	L-PFBS	L-PFOS	Br-PFOS	Sum PFOS
Radish	Roots	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.177	0.145	0.039	0.184
	Bulb	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.018	0.014	0.004	0.018
	Foliage	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.028	0.023	0.006	0.029
Lettuce	Roots	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.022	0.018	0.005	0.023
	Foliage	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.017	0.014	0.004	0.017
Pea	Roots	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.177	0.145	0.039	0.184
	Stem	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.030	0.024	0.006	0.031
	Leaves	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.035	0.029	0.008	0.037
	Pods	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.016	0.013	0.004	0.017
	Peas	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.018	0.014	0.004	0.018
Maize	Roots	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.022	0.018	0.005	0.023
	Stem	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.022	0.018	0.005	0.023
	Leaves	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.035	0.029	0.008	0.037
	Cobs	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.033	0.027	0.007	0.034
	Hull-Leaves	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.044	0.036	0.010	0.046
	Kernels	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.011	0.009	0.002	0.011
Soil		0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.089	0.072	0.019	0.092
Pore-water		0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.089	0.072	0.019	0.092

Figure S2: Comparison of a radish harvested from an unspiked lysimeter (left) with a radish harvested from the highest exposure level (right) on the same date.

Table S7: Concentrations in soil at the start of the experiment in ng g^{-1} dry weight.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS	Water content (mL g^{-1} dw)
Radish														
Level 1	96.4	109.4	110.3	104.0	105.5	86.4	89.1	115.8	88.4	119.3	83.2	110.2	107.4	0.014
Level 2	981.3	984.4	837.1	1083	1146	1098	952.8	1089	988.6	1015	938.1	999.34	906.5	0.034
Level 3	4929	4358	3218	5286	5044	4455	5089	4722	4857	5123	4977	4693	5257	0.027
Level 4	7287	9961	4590	10400	9735	9572	10198	10530	10122	10339	8969	9877	10581	0.032
Lettuce														
Level 1	105.3	99.0	105.0	98.9	97.8	98.2	103.8	94.9	87.3	115.2	87.9	97.4	108.3	0.022
Level 2	952.7	972.5	916.2	1033	1116	1066	973.3	1054	1019	1017	978.9	1015	1008	0.004
Level 3	4626	4511	3170	4950	4937	4737	5096	4640	4717	4905	5131	4757	5244	0.041
Level 4	7769	9321	4832	10063	9990	9999	10239	10102	10212	9888	8790	9607	9834	0.028
Pea														
Level 1	100.3	99.3	98.3	87.6	89.2	97.6	99.0	81.9	85.0	102.1	85.9	92.0	103.9	0.006
Level 2	914.5	929.5	748.4	1040	1042	1066	946.7	1030	1003	953.7	909.5	990.3	1036	0.026
Level 3	3984	4252	2349	4473	5095	4971	5042	4591	4331	4885	4980	4793	5138	0.008
Level 4	6406	9087	4269	9897	10143	10030	10396	9417	10072	8876	8183	9250	9354	0.027
Maize														
Level 1	119.2	88.2	106.4	105.2	98.8	110.7	123.2	87.1	88.6	124.2	94.6	90.1	113.7	0.005
Level 2	962.1	1004	1163	976.3	1161	1035	1020	1043	1065	1083	1089	1055	1080	0.014
Level 3	4966	4921	3942	5091	4671	4786	5156	4608	4963	4709	5437	4785	5335	0.017
Level 4	9613	8916	5638	9892	10092	10397	10125	10359	10441	10447	9217	9695	9566	0.020

Table S8: Concentrations in soil at the time of the harvest in ng g^{-1} dry weight.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS	Water content (mL g^{-1} dw)
Radish														
Level 1	<LoQ	0.27	0.42	0.62	0.34	1.63	21.3	38.7	47.9	80.0	52.6	0.51	16.6	0.163
Level 2	5.23	6.11	4.07	6.08	4.93	16.2	273.0	444.6	729.9	838.6	837.1	5.56	123.7	0.169
Level 3	6.70	7.33	6.78	10.6	24.8	71.0	1727	2129	3439	3819	4108	17.1	716.0	0.168
Level 4	18.4	9.89	5.31	9.60	28.6	158.1	3177	5559	7384	7951	7885	14.1	1373	0.155
Lettuce														
Level 1	2.57	2.09	2.57	44.9	30.9	46.2	51.7	60.0	62.7	93.9	72.9	3.39	78.2	0.146
Level 2	10.1	8.40	7.76	46.2	210.8	450.0	516.1	629.9	735.0	770.5	848.5	17.1	712.3	0.136
Level 3	10.4	11.4	20.1	60.8	583.9	2150	2494	2883	3245	3928	4259	38.1	3801	0.132
Level 4	10.8	14.2	31.8	132.9	1683	3973	5072	6037	7098	7779	7299	62.6	7075	0.140
Pea														
Level 1	0.56	0.93	1.85	26.5	41.0	53.7	62.8	67.3	65.7	77.6	79.8	2.79	83.3	0.054
Level 2	1.95	3.51	6.51	35.1	365.8	597.9	679.5	835.8	713.6	795.5	808.6	9.33	836.2	0.071
Level 3	15.8	20.9	33.6	76.6	1394	2852	3591	4206	3357	4218	4478	82.8	4317	0.042
Level 4	11.3	16.1	32.5	121.0	2035	5980	6962	8237	7454	7180	7674	67.2	7271	0.038
Maize														
Level 1	3.06	2.48	2.19	9.42	35.0	22.7	36.7	42.1	57.2	96.7	74.9	3.01	66.2	0.135
Level 2	21.4	23.2	26.6	114.8	312.7	258.2	353.4	590.5	639.5	849.6	918.5	31.2	616.4	0.127
Level 3	12.5	10.8	11.9	22.0	159.2	1386	1897	2651	3279	3847	4868	20.0	3850	0.135
Level 4	16.6	18.5	27.6	79.1	347.5	2813	3978	5826	6324	8547	8919	65.7	6513	0.134

Table S9: Concentrations in pore water at the time of the harvest in ng mL^{-1}.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1	<LoQ	0.42	0.40	0.37	<LoQ	0.21	0.14	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	0.25
Level 2	36.3	30.8	11.7	10.5	3.32	2.82	4.65	1.85	2.23	4.94	7.44	6.65	3.22
Level 3	39.2	31.4	12.5	16.1	10.6	8.61	28.3	15.3	12.0	14.5	19.1	13.8	19.6
Level 4	60.1	27.0	3.81	4.85	5.59	4.37	31.4	56.4	59.5	81.4	117.4	3.9	18.2
Lettuce													
Level 1	24.0	12.7	9.09	93.9	24.8	3.28	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	4.53	<LoQ
Level 2	99.2	67.9	29.6	113.2	322.7	86.4	16.0	<LoQ	<LoQ	<LoQ	2.39	23.3	35.2
Level 3	84.8	80.0	84.5	118.0	346.7	875.6	258.7	42.0	19.2	22.0	34.5	32.7	402.7
Level 4	96.2	101.8	127.4	368.6	3994	1777	293.1	81.5	47.8	50.7	74.8	175.5	547.9
Maize													
Level 1	30.5	14.9	5.18	13.2	21.5	3.73	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	2.95	0.73
Level 2	224.7	187.3	118.2	470.4	742.9	79.9	12.2	1.78	0.12	<LoQ	0.69	68.4	21.2
Level 3	94.9	55.8	23.4	33.2	54.3	722.9	134.9	23.1	8.61	9.62	13.3	23.6	175.8
Level 4	136.2	119.8	96.8	154.6	766.2	1457	279.9	51.2	20.7	23.4	32.3	70.4	400.8

Table S10: Concentration in radish plant compartments in ng g^{-1} ww

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Roots													
Level 1	99.8	89.7	39.7	89.7	124.6	106.6	51.8	32.5	25.3	27.6	30.4	8.97	18.9
Level 2	288.8	198.9	61.6	182.7	146.4	217.8	113.1	245.1	248.6	293.8	271.6	17.4	221.3
Level 3	451.4	292.0	68.7	146.6	165.4	1310	533.9	1141	1110	1129	910.7	50.1	1109
Level 4	499.7	193.0	18.5	67.9	144.4	2734	1225	5373	2406	2345	2176	27.2	1939
Bulb													
Level 1	1.10	15.0	2.75	5.40	5.17	2.26	0.90	<LoQ	<LoQ	<LoQ	<LoQ	0.20	<LoQ
Level 2	462.3	189.0	47.6	323.9	42.7	32.7	22.9	20.7	14.8	12.3	7.68	50.5	17.7
Level 3	902.9	584.9	88.3	292.4	219.0	142.6	117.9	128.0	73.6	61.9	39.8	150.1	87.6
Level 4	1505	654.8	73.8	302.7	452.4	282.0	238.7	260.0	174.6	113.7	85.9	191.7	169.4
Leaves													
Level 1	60.9	147.7	25.4	30.7	31.1	11.5	3.46	<LoQ	<LoQ	<LoQ	<LoQ	39.4	2.73
Level 2	8743	3690	946.6	1690	602.2	386.1	94.1	26.3	25.8	19.5	19.6	441.7	645.6
Level 3	14495	6127	716.1	1163	1012	1578	528.8	140.0	117.7	99.6	92.0	879.2	3792
Level 4	18098	8577	774.6	1122	1427	4035	1288	393.7	226.2	206.3	215.5	745.9	7369

Table S11: Concentrations in lettuce plant compartments in ng g^{-1} ww

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Roots													
Level 1	389.2	141.9	3.88	1.94	2.50	16.4	28.4	30.5	25.8	8.83	5.08	0.51	16.2
Level 2	929.8	225.4	10.9	7.68	31.0	176.3	366.7	486.0	267.6	107.0	67.1	3.67	308.7
Level 3	420.0	91.3	12.0	10.1	81.7	1376	2096	2552	1160	601.4	327.5	9.24	1433
Level 4	158.1	28.3	5.95	7.77	61.8	1173	2569	4140	2096	1194	612	4.01	2410

Leaves													
Level 1	732.4	474.0	43.2	12.0	5.11	1.64	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	4.14	<LoQ
Level 2	1621	833.0	109.1	73.1	108.4	185.8	69.4	58.2	35.6	27.1	14.7	40.8	134.2
Level 3	810.3	388.1	78.3	162.3	552.5	1837	806.2	313.9	179.8	121.1	82.8	159.2	3337
Level 4	292.1	97.9	35.3	83.5	819.8	4184	2156	619.2	355.6	251.7	150.5	16.5	6571

Table S12: Concentrations in pea plant compartments in ng g^{-1} ww

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Roots													
Level 1	302.4	117.2	63.19	52.6	12.9	12.1	27.1	31.0	12.8	8.94	5.13	25.1	14.8
Level 2	392.4	237.4	192.8	280.2	131.5	145.3	297.8	354.6	173.4	121.2	108.4	52.4	216.1
Level 3	851.5	442.0	278.2	767.3	716.2	740.2	1477	1655	884.0	759.4	577.0	286.5	1087
Level 4	982.9	588.3	412.1	1473	1339	1501	3069	3452	2079	1395	1127	572.9	2138
Stem													
Level 1	623.9	200.8	44.6	19.1	11.4	6.53	4.89	0.89	0.16	<LoQ	<LoQ	24.9	2.42
Level 2	1380	583.8	147.9	186.4	84.2	70.6	51.5	28.4	5.17	1.31	0.58	186.9	51.6
Level 3	3795	1318	508.8	464.1	557.8	533.9	303.9	144.1	33.6	7.70	2.80	732.7	499.0
Level 4	4859	1613	537.0	497.4	743.5	960.4	618.1	347.9	55.9	9.94	5.24	964.4	1210
Leaves													
Level 1	2520	2216	508.7	287.7	90.6	19.9	6.84	0.93	0.41	<LoQ	<LoQ	1454	7.89
Level 2	3700	2998	1031	1406	487.1	307.1	121.5	44.7	7.73	0.84	<LoQ	1988	139.2
Level 3	7469	5665	1549	2647	4828	5106	1641	411.1	32.1	5.17	0.39	6402	4831
Level 4	10565	10693	4084	7262	6510	5062	1731	519.4	23.7	12.1	5.92	12529	5578
Pods													
Level 1	1511	265.7	18.1	8.19	1.25	0.27	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	41.0	<LoQ
Level 2	2949	675.9	76.8	65.4	28.3	12.9	4.89	1.23	0.32	<LoQ	<LoQ	165.7	14.3
Level 3	4495	1130	187.7	148.1	155.6	109.4	30.7	11.7	1.93	0.37	<LoQ	510.5	141.1
Level 4	4305	1561	450.3	398.4	193.4	61.9	23.4	3.62	0.56	0.07	<LoQ	807.7	76.7
Peas													
Level 1	573.9	88.1	9.45	2.39	0.26	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	11.9	<LoQ
Level 2	2816	279.3	46.5	28.6	7.92	1.56	0.40	0.11	<LoQ	<LoQ	<LoQ	58.5	1.52
Level 3	4198	540.0	87.5	60.7	61.8	14.8	2.58	0.40	<LoQ	<LoQ	<LoQ	147.0	8.83
Level 4	3187	628.4	220.6	158.4	45.7	6.7	0.6	0.13	<LoQ	<LoQ	<LoQ	265.6	3.08

Table S13: Concentrations in maize plant compartments in ng g^{-1} ww

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Roots													
Level 1	39.1	23.0	9.86	6.68	3.03	4.71	15.8	15.7	11.9	10.3	6.00	9.38	19.7
Level 2	105.3	120.4	29.1	68.3	33.5	52.7	150.0	206.7	115.4	99.5	71.0	46.6	218.1
Level 3	125.6	104.6	69.6	157.6	149.7	264.8	658.9	944.0	525.7	464.0	348.4	58.6	973.5
Level 4	301.4	361.5	136.5	266.5	293.4	538.3	1023	1923	1042	837.0	704.4	152.1	2031
Stem													
Level 1	40.6	14.3	2.00	0.77	0.38	0.20	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	6.05	0.42
Level 2	175.1	101.9	22.0	18.0	10.0	9.16	5.64	2.01	<LoQ	<LoQ	<LoQ	53.1	52.0
Level 3	187.5	138.5	46.1	91.9	83.6	72.3	42.7	17.9	1.84	0.60	0.50	73.3	257.9
Level 4	479.6	305.2	86.9	99.5	115.3	104.4	73.8	34.9	3.64	0.61	0.20	144.7	471.8
Leaves													
Level 1	9209	1296	102.0	39.6	18.6	5.12	0.77	<LoQ	<LoQ	<LoQ	<LoQ	97.8	8.77
Level 2	31329	4577	503.0	537.9	313.8	168.9	36.0	2.68	0.81	0.69	0.94	751.1	568.6
Level 3	33174	5363	1167	1448	1613	895.7	214.3	27.3	2.05	3.66	4.60	822.5	2766
Level 4	30552	4749	1290	1621	2782	1831	435.0	59.3	2.94	3.60	5.32	1028	5558
Hull-Leaves													
Level 1	146.0	19.9	3.19	0.67	0.24	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	3.73	0.19
Level 2	571.5	122.5	14.8	20.5	9.62	7.37	1.39	<LoQ	<LoQ	<LoQ	<LoQ	33.2	13.2
Level 3	464.3	121.5	19.3	48.7	63.2	42.7	18.3	1.33	<LoQ	<LoQ	<LoQ	33.5	100.1
Level 4	798.9	227.9	31.8	125.2	136.3	86.9	32.9	2.05	<LoQ	<LoQ	<LoQ	79.9	202.7
Cobs													
Level 1	22.5	3.39	1.86	0.20	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	0.49	<LoQ
Level 2	78.4	34.8	20.2	8.83	3.34	1.91	0.35	<LoQ	<LoQ	<LoQ	<LoQ	4.12	1.94
Level 3	44.2	25.4	19.0	17.6	22.5	19.3	6.85	0.55	<LoQ	<LoQ	<LoQ	5.19	32.8
Level 4	139.0	113.1	56.9	62.0	60.6	34.4	11.7	1.13	<LoQ	<LoQ	<LoQ	9.08	36.4
Kernels													
Level 1	9.92	7.59	7.71	0.26	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	0.58	<LoQ
Level 2	33.6	78.1	44.4	6.66	0.29	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	4.97	0.10
Level 3	18.6	49.9	42.1	11.1	2.13	0.40	<LoQ	<LoQ	<LoQ	<LoQ	<LoQ	4.91	0.25
Level 4	84.3	301.9	214.8	104.1	17.8	2.35	0.33	<LoQ	<LoQ	<LoQ	<LoQ	14.9	0.36

Table S14: Root concentration factors based on soil concentrations (RCFs; concentration in the roots divided by the concentration in the soil. Units: kg soil dry weight per kg root fresh weight). Level 4 was not considered for radish and lettuce due to phytotoxic effects.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1	38.9	43.0	15.4	2.00	4.03	2.31	1.00	0.54	0.40	0.29	0.42	2.65	0.24
Level 2	28.7	23.7	7.94	3.96	0.69	0.48	0.22	0.39	0.34	0.38	0.32	1.02	0.31
Level 3	43.4	25.6	3.41	2.41	0.28	0.61	0.21	0.40	0.34	0.29	0.21	1.32	0.29
Lettuce													
Level 1	152	68.0	1.51	0.043	0.081	0.36	0.55	0.51	0.41	0.094	0.070	0.15	0.21
Level 2	92.4	26.8	1.41	0.17	0.15	0.39	0.71	0.77	0.36	0.14	0.079	0.21	0.43
Level 3	40.4	8.00	0.60	0.17	0.14	0.64	0.84	0.89	0.36	0.15	0.077	0.24	0.38
Pea													
Level 1			34.1		0.31	0.23	0.43	0.46	0.20	0.12	0.064	9.02	0.18
Level 2	201	67.6	29.6	7.99	0.36	0.24	0.44	0.42	0.24	0.15	0.13	5.61	0.26
Level 3	54.0	21.2	8.29	10.0	0.51	0.26	0.41	0.39	0.26	0.18	0.13	3.46	0.25
Level 4	87.0	36.5	12.7	12.2	0.66	0.25	0.44	0.42	0.28	0.19	0.15	8.53	0.29
Maize													
Level 1	12.8	9.25	4.50	0.71	0.09	0.21	0.43	0.37	0.21	0.11	0.080	3.12	0.30
Level 2	4.93	5.20	1.09	0.60	0.11	0.20	0.42	0.35	0.18	0.12	0.077	1.49	0.35
Level 3	10.1	9.64	5.87	7.15	0.94	0.19	0.35	0.36	0.16	0.12	0.072	2.93	0.25
Level 4	18.2	19.5	4.95	3.37	0.84	0.19	0.26	0.33	0.16	0.10	0.079	2.31	0.31

Table S15: Root concentration factors based on pore water concentrations (RCF_{PW}; concentration in the roots divided by the concentration in the pore water. Units: L pore water per kg root fresh weight). Level 4 was not considered for radish and lettuce due to phytotoxic effects. No values could be calculated for pea because no pore water could be retrieved at the time of harvest.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1	4.16	7.06	4.36	0.96	5.03	32.6						1.98	
Level 2	2.91	2.93	2.08	1.61	0.45	2.52	7.05				114	0.75	6.28
Level 3	5.32	3.65	0.81	1.24	0.48	1.50	2.06	27.2	57.9	51.4	26.4	1.53	2.75
Lettuce													
Level 1	16.2	11.2	0.43	0.021	0.10	5.02						0.11	
Level 2	9.37	3.32	0.37	0.068	0.10	2.04	22.9				28.1	0.16	8.76
Level 3	4.95	1.14	0.14	0.086	0.24	1.57	8.10	60.8	60.5	27.4	9.50	0.28	3.56
Maize													
Level 1	1.28	1.55	1.90	0.51	0.14	1.26						3.18	
Level 2	0.47	0.64	0.25	0.15	0.045	0.66						0.68	10.3
Level 3	1.32	1.88	2.97	4.74	2.76	0.37	4.89	40.8	61.1	48.2	26.3	2.48	5.54
Level 4	2.21	3.02	1.41	1.72	0.38	0.37	3.65	37.5	50.3	35.7	21.8	2.16	5.07

Table S16: Edible part concentration factor based on soil concentrations (ECFs; concentration in the edible parts divided by the concentration in the soil. Units: kg dry soil per kg edible part fresh weight). The edible parts were defined as: bulbs (radish), foliage (lettuce), peas (pea) and kernels (maize). Level 4 was not considered for radish and lettuce due to phytotoxic effects.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1	0.43	7.2	1.1	0.12	0.17	0.049	0.017					0.059	
Level 2	46	23	6.1	7.0	0.20	0.073	0.044	0.033	0.020	0.016	0.0091	2.9	0.025
Level 3	87	51	4.4	4.8	0.38	0.066	0.047	0.044	0.023	0.016	0.0093	3.9	0.023
Lettuce													
Level 1	285	227	16.8	0.27	0.17	0.036						1.2	
Level 2	161	99	14.1	1.6	0.51	0.41	0.13	0.092	0.048	0.035	0.017	2.4	0.19
Level 3	78	34	3.9	2.7	0.95	0.85	0.32	0.11	0.055	0.031	0.019	4.2	0.88
Pea													
Level 1	1029	95	5.1	0.09	0.01							4.3	
Level 2	1445	80	7.1	0.82	0.02	0.0026	0.00059	0.00014				6.3	0.0018
Level 3	266	26	2.6	0.79	0.04	0.0052	0.00072	0.000094				1.8	0.0020
Level 4	282	39.0	6.8	1.3	0.02	0.0011	0.000090	0.000015				4.0	0.00042
Maize													
Level 1	3.2	3.1	3.5	0.028								0.19	
Level 2	1.6	3.4	1.7	0.058	0.00092							0.16	0.00016
Level 3	1.5	4.6	3.5	0.51	0.013	0.00029	0.000082					0.25	0.000064
Level 4	5.1	16.3	7.8	1.3	0.051	0.00083						0.23	0.000055

Table S17: Whole plant concentration factors based on soil concentrations (PCFs; concentration in the whole plant divided by the concentration in the soil. Units: kg soil dry weight per kg plant fresh weight). Level 4 was not considered for radish and lettuce due to phytotoxic effects.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1		25	4.2	0.39	0.66	0.27	0.105	0.042	0.031	0.023	0.032	2.9	0.027
Level 2	234	119	33	13.6	0.85	0.29	0.090	0.062	0.048	0.046	0.036	8.1	0.25
Level 3	385	161	11.5	7.9	0.68	0.26	0.098	0.072	0.050	0.039	0.028	8.2	0.27
Lettuce													
Level 1	263	201	14.3	0.23	0.151	0.089	0.092	0.085	0.069	0.016	0.012	1.04	
Level 2	150	87	12.0	1.347	0.45	0.41	0.23	0.21	0.101	0.053	0.028	2.0	0.23
Level 3	72	30	3.3	2.255	0.81	0.82	0.41	0.24	0.106	0.051	0.029	3.5	0.79
Pea													
Level 1	1644	388	41	1.61	0.33	0.094	0.088	0.071	0.029	0.017	0.0093	60	0.041
Level 2	1184	193	29	6.9	0.25	0.114	0.097	0.074	0.038	0.022	0.0194	32	0.070
Level 3	255	62	10.7	6.7	0.54	0.26	0.123	0.074	0.041	0.027	0.0188	11.8	0.178
Level 4	366	124	23	9.7	0.51	0.154	0.106	0.075	0.042	0.029	0.021	26	0.153
Maize													
Level 1	389	70	7.7	0.68	0.083	0.064	0.074					5.2	0.067
Level 2	190	28	3.2	0.76	0.156	0.122	0.086	0.059	0.030	0.020	0.013	3.8	0.193
Level 3	342	69	15.1	10.7	1.61	0.130	0.078	0.062	0.027	0.020	0.012	6.7	0.150
Level 4	248	44	9.1	4.0	1.30	0.127	0.062	0.057	0.027	0.016	0.013	3.0	0.178

Table S18: Whole plant concentration factors based on pore water concentrations (PCF_{PW}; concentration in the whole plant divided by the concentration in the pore water. Units: L pore water per kg plant fresh weight). Level 4 was not considered for radish and lettuce due to phytotoxic effects. Values for radish and pea were calculated using concentrations in pore water from the lettuce lysimeters.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1		4.0	1.19	0.189	0.82	3.8						2.2	
Level 2	24	14.7	8.6	5.6	0.56	1.49	2.9				12.9	5.9	5.1
Level 3	47	23	2.7	4.1	1.15	0.64	0.95	5.0	8.5	7.0	3.4	9.5	2.5
Lettuce													
Level 1	28	33	4.0	0.110	0.19	1.25						0.78	
Level 2	15.2	10.8	3.1	0.55	0.30	2.1	7.4				9.8	1.48	4.6
Level 3	8.8	4.2	0.80	1.16	1.37	2.0	3.9	16.4	17.9	9.2	3.6	4.1	7.5
Pea													
Level 1	38	28	8.3	0.45	0.54	1.54						37	
Level 2	23	10.0	6.5	2.1	0.29	0.79	4.1				6.6	12.7	1.65
Level 3	47	16.2	4.3	4.4	2.2	0.85	1.71	7.4	7.2	5.1	2.4	30	1.91
Level 4	43	19.6	5.8	3.2	0.26	0.52	2.5	7.6	6.6	4.0	2.2	10.1	2.0
Maize													
Level 1	39	11.6	3.3	0.48	0.134	0.39						5.3	6.2
Level 2	18.1	3.5	0.72	0.187	0.066	0.39	2.5	19.7	16.0		17.2	1.73	5.6
Level 3	45	13.3	7.6	7.1	4.7	0.25	1.10	7.1	10.2	8.1	4.4	5.6	3.3
Level 4	30	6.8	2.6	2.0	0.59	0.25	0.88	6.5	8.4	6.0	3.6	2.8	2.9

Table S19: P-values from the T-test (two tailed, two sample unequal variance) comparing PCF_{PW} between PFAAs.

a) Radish

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
PFBA	1.000	0.175	0.039	0.097	0.017	0.015	0.062				0.202	0.042	0.044
PFPeA		1.000	0.172	0.211	0.025	0.054	0.103				0.600	0.304	0.169
PFHxA			1.000	0.642	0.135	0.426	0.506				0.451	0.535	0.824
PFHpA				1.000	0.586	0.966	0.990				0.347	0.416	0.547
PFOA					1.000	0.338	0.405				0.166	0.034	0.081
PFNA						1.000	0.931				0.211	0.157	0.264
PFDA							1.000				0.251	0.249	0.379
PFUnA													
PFDoDA													
PFTrDA													
PFTeDA											1.000	0.749	0.516
PFBS												1.000	0.595
Sum PFOS													1.000

Significant values ($p < 0.05$) are highlighted in red.

Table S19: P-values from the T-test (two tailed, two sample unequal variance) comparing PCF_{PW} between PFAAs.
b) Lettuce

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
PFBA	1.000	0.684	0.038	0.020	0.012	0.011	0.113				0.259	0.024	0.101
PFPeA		1.000	0.100	0.023	0.017	0.077	0.350				0.461	0.069	0.387
PFHxA			1.000	0.133	0.108	0.726	0.221				0.262	0.739	0.178
PFHpA				1.000	0.976	0.167	0.051				0.053	0.181	0.051
PFOA					1.000	0.133	0.036				0.045	0.151	0.036
PFNA						1.000	0.117				0.223	0.942	0.055
PFDA							1.000				0.894	0.136	0.850
PFUnA													
PFDoDA													
PFTrDA													
PFTeDA											1.000	0.183	0.993
PFBS												1.000	0.110
Sum PFOS													1.000

Significant values ($p < 0.05$) are highlighted in red.

Table S19: P-values from the T-test (two tailed, two sample unequal variance) comparing PCF_{PW} between PFAAs.

c) Pea

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
PFBA	1.000	0.035	0.000	0.007	0.002	0.000	0.002	0.002	0.001	0.001	0.010	0.139	0.000
PFPeA		1.000	0.009	0.015	0.003	0.000	0.004	0.030	0.021	0.006	0.020	0.783	0.001
PFHxA			1.000	0.102	0.012	0.001	0.058	0.220	0.435	0.196	0.214	0.027	0.001
PFHpA				1.000	0.122	0.215	0.608	0.073	0.084	0.184	0.419	0.011	0.957
PFOA					1.000	0.442	0.042	0.013	0.013	0.020	0.031	0.001	0.085
PFNA						1.000	0.025	0.002	0.002	0.003	0.037	0.000	0.036
PFDA							1.000	0.053	0.059	0.153	0.628	0.004	0.311
PFUnA								1.000	0.290	0.141	0.142	0.057	0.001
PFDoDA									1.000	0.138	0.166	0.045	0.000
PFTrDA										1.000	0.457	0.015	0.038
PFTeDA											1.000	0.015	0.243
PFBS												1.000	0.004
Sum PFOS													1.000

Significant values ($p < 0.05$) are highlighted in red.

Table S19: P-values from the T-test (two tailed, two sample unequal variance) comparing PCF_{PW} between PFAAs.

d) Maize

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
PFBA	1.000	0.012	0.009	0.021	0.017	0.000	0.002	0.058	0.014	0.005	0.068	0.001	0.000
PFPeA		1.000	0.116	0.084	0.045	0.001	0.012	0.665	0.372	0.751	0.776	0.101	0.154
PFHxA			1.000	0.385	0.142	0.019	0.305	0.083	0.053	0.139	0.246	0.636	0.407
PFHpA				1.000	0.453	0.221	0.807	0.065	0.058	0.100	0.116	0.242	0.183
PFOA					1.000	0.816	0.294	0.037	0.036	0.055	0.053	0.101	0.084
PFNA						1.000	0.029	0.005	0.000	0.001	0.019	0.001	0.000
PFDA							1.000	0.015	0.008	0.023	0.063	0.080	0.044
PFUnA								1.000	0.753	0.459	0.553	0.084	0.130
PFDoDA									1.000	0.150	0.395	0.020	0.017
PFTrDA										1.000	0.915	0.097	0.122
PFTeDA											1.000	0.340	0.484
PFBS												1.000	0.576
Sum PFOS													1.000

Significant values ($p < 0.05$) are highlighted in red.

Table S20: Root retention factors (RRFs; mass in the roots as a fraction of the PFAA mass in the whole plant). Level 4 was not considered for radish and lettuce due to phytotoxic effects.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1	0.34	0.134	0.28	0.39	0.47	0.66	0.74					0.070	0.70
Level 2	0.009	0.015	0.019	0.022	0.063	0.130	0.188	0.48	0.54	0.64	0.68	0.010	0.095
Level 3	0.009	0.012	0.023	0.023	0.032	0.179	0.168	0.42	0.52	0.57	0.59	0.012	0.084
Lettuce													
Level 1	0.096	0.056	0.018	0.031	0.089	0.67						0.024	
Level 2	0.103	0.051	0.020	0.021	0.054	0.159	0.51	0.63	0.60	0.44	0.48	0.018	0.32
Level 3	0.094	0.045	0.030	0.012	0.029	0.130	0.34	0.62	0.56	0.50	0.44	0.011	0.082
Pea													
Level 1	0.048	0.047	0.121	0.178	0.138	0.35	0.71	0.94	0.96			0.022	0.68
Level 2	0.025	0.051	0.146	0.169	0.21	0.31	0.65	0.84	0.93	0.98		0.026	0.55
Level 3	0.031	0.049	0.112	0.22	0.139	0.143	0.48	0.77	0.93	0.98	0.99	0.042	0.22
Level 4	0.034	0.043	0.081	0.182	0.186	0.24	0.60	0.81	0.96	0.98	0.99	0.047	0.29
Maize													
Level 1	0.0055	0.022	0.097	0.174	0.174	0.54	0.97					0.099	0.75
Level 2	0.0043	0.031	0.057	0.129	0.114	0.28	0.82	0.98	0.99	0.99	0.99	0.065	0.31
Level 3	0.0049	0.023	0.064	0.110	0.097	0.24	0.74	0.96	0.99	0.99	0.99	0.073	0.28
Level 4	0.0122	0.073	0.090	0.140	0.107	0.25	0.69	0.96	0.99	1.00	0.99	0.127	0.29

Table S21: P-values from the T-test (two tailed, two sample unequal variance) comparing RRF between plant species.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish vs.													
Lettuce	0.860	0.946	0.430	0.418	0.452	0.987	0.779	0.107	0.182	0.097	0.125	0.580	0.733
Pea	0.521	0.884	0.946	0.770	0.894	0.744	0.316	0.002	0.000	0.055	0.080	0.875	0.573
Maize	0.415	0.725	0.758	0.962	0.690	0.983	0.132	0.000	0.013	0.053	0.080	0.067	0.649
Lettuce vs.													
Radish	0.860	0.946	0.430	0.418	0.452	0.987	0.779	0.107	0.182	0.097	0.125	0.580	0.733
Pea	0.000	0.411	0.004	0.000	0.007	0.766	0.228	0.010	0.011	0.035	0.021	0.074	0.259
Maize	0.000	0.350	0.007	0.001	0.046	0.968	0.067	0.000	0.029	0.035	0.021	0.011	0.312
Pea vs.													
Radish	0.521	0.884	0.946	0.770	0.894	0.744	0.316	0.002	0.000	0.055	0.080	0.875	0.573
Lettuce	0.000	0.411	0.004	0.000	0.007	0.766	0.228	0.010	0.011	0.035	0.021	0.074	0.259
Maize	0.007	0.473	0.068	0.032	0.120	0.447	0.049	0.042	0.012	0.001	0.721	0.020	0.866
Maize vs.													
Radish	0.415	0.725	0.758	0.962	0.690	0.983	0.132	0.027	0.013	0.053	0.080	0.067	0.649
Lettuce	0.000	0.350	0.007	0.001	0.046	0.968	0.067	0.000	0.029	0.035	0.021	0.011	0.312
Pea	0.007	0.473	0.068	0.032	0.120	0.447	0.049	0.042	0.012	0.001	0.721	0.020	0.866

Significant values ($p < 0.05$) are highlighted in red.

Table S22: Edible part to leaf concentration factor (ELCF, kg leaf fresh weight per kg edible part fresh weight). Level 4 was not considered for radish due to phytotoxic effects.

	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoDA	PFTrDA	PFTeDA	PFBS	PFOS
Radish													
Level 1	0.018	0.102	0.108	0.176	0.166	0.196	0.26					0.005	
Level 2	0.053	0.051	0.050	0.192	0.071	0.085	0.24	0.79	0.57	0.63	0.39	0.114	0.027
Level 3	0.062	0.095	0.123	0.25	0.22	0.090	0.22	0.91	0.63	0.62	0.43	0.171	0.023
Pea													
Level 1	0.23												
Level 2	0.76	0.093	0.045	0.020	0.0163	0.0051	0.0033	0.0026				0.029	
Level 3	0.56	0.095	0.056	0.023	0.0128	0.0029	0.00157	0.00096				0.023	0.00183
Level 4	0.30	0.059	0.054	0.022	0.0070							0.021	0.00055
Maize													
Level 1	0.00108	0.0059	0.076	0.0066								0.0060	
Level 2	0.00107	0.0171	0.088	0.0124	0.00091							0.0066	0.000177
Level 3	0.00056	0.0093	0.036	0.0077	0.00132	0.00044	0.00075					0.0060	0.000089
Level 4						0.00128						0.0145	0.000065

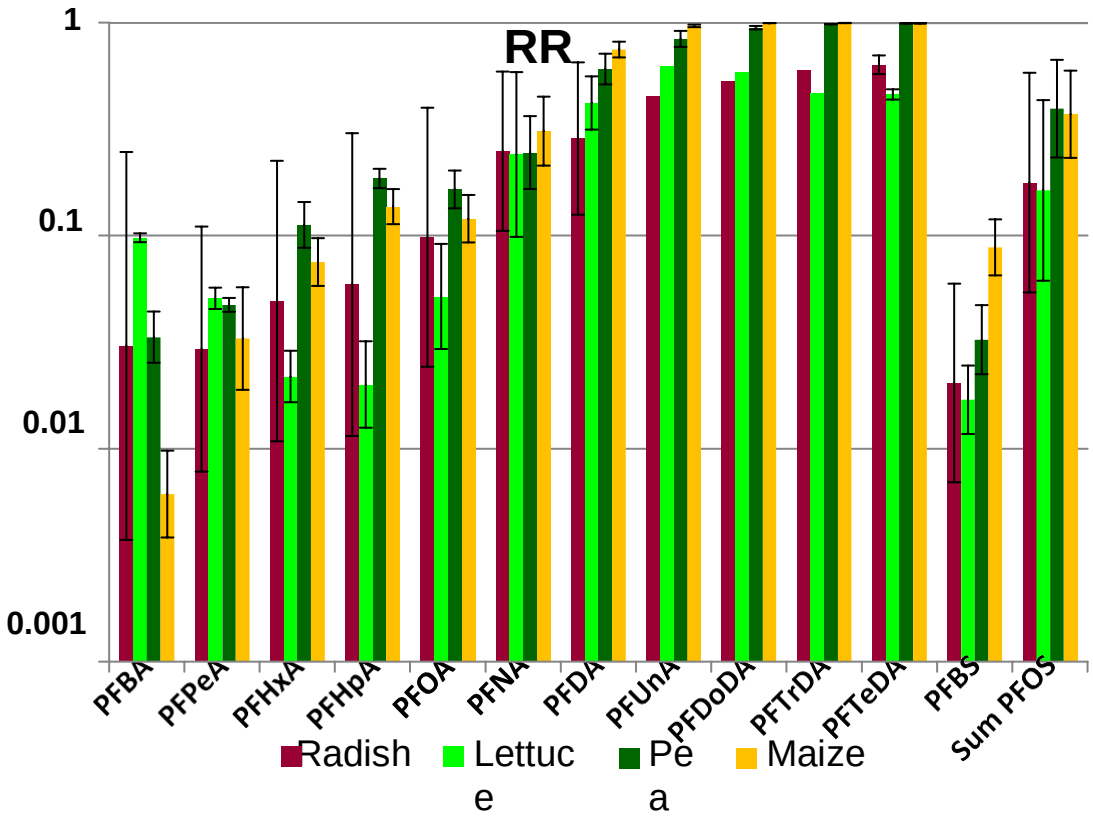


Figure S3: Logarithmic plot of root retention factor (RRF), equal to the PFAA mass in the roots as a fraction of the PFAA mass in the whole plant. The average and standard deviation from experiments conducted at different exposure levels are shown, assuming a log-normal distribution.

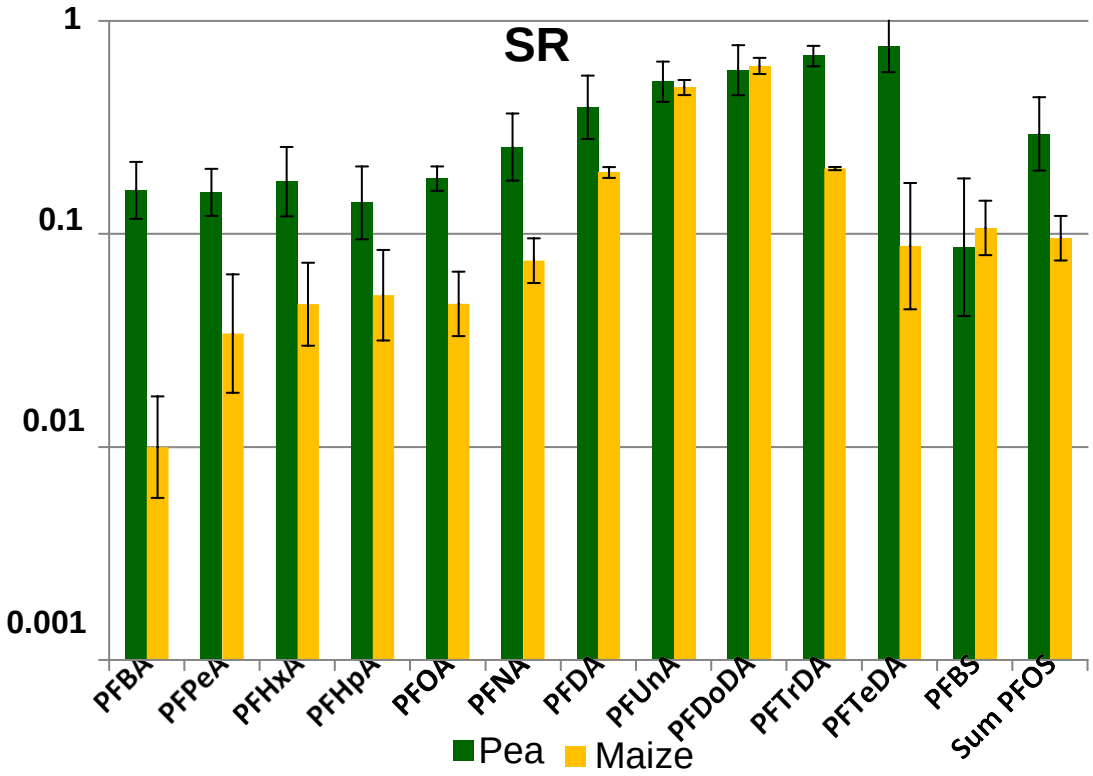


Figure S4: Stem retention factor (SRF), equal to the PFAA mass in the stem as a fraction of the PFAA mass in the above-ground plant parts. The average and standard deviation from experiments conducted at different exposure levels are shown, assuming a log-normal distribution.

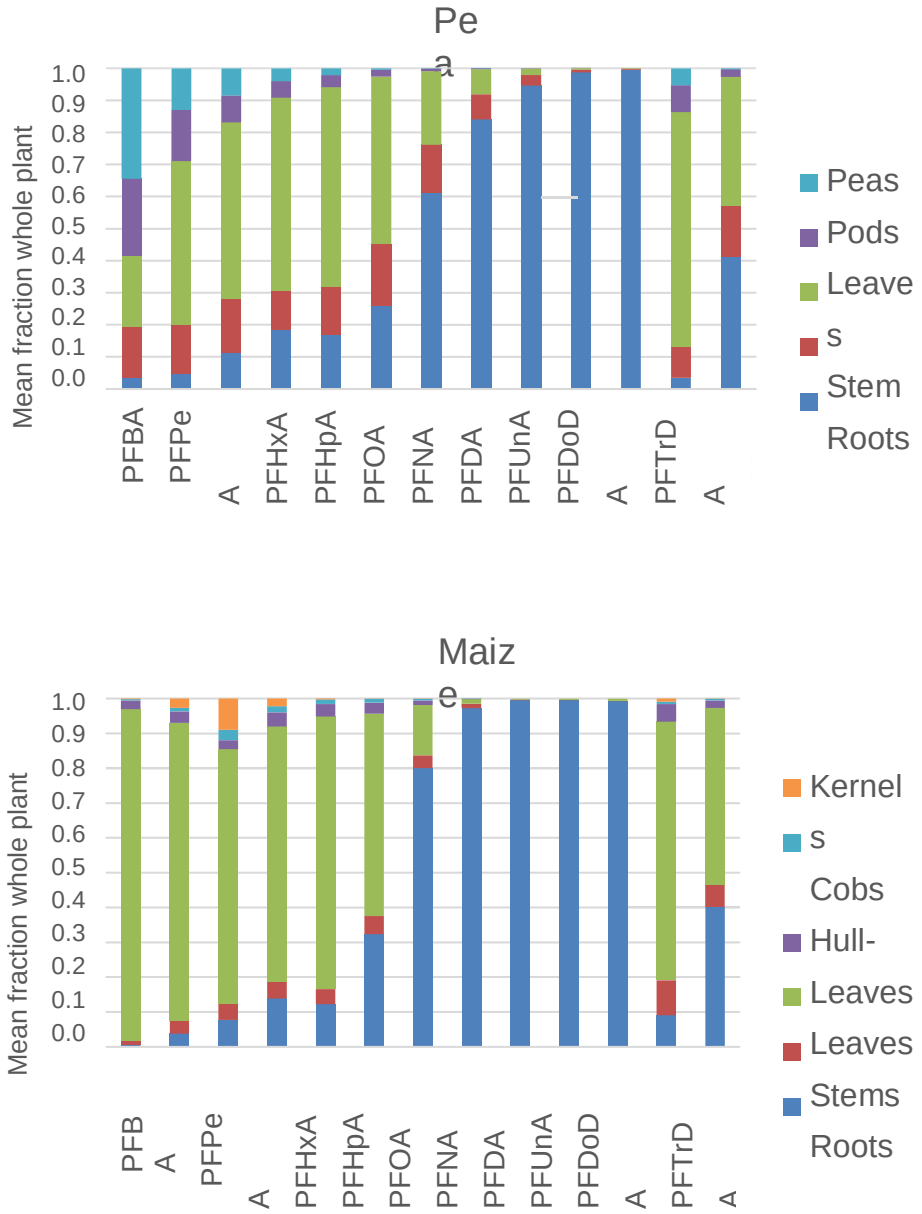


Figure S5: Distribution of the PFAAs between different plant parts in a) pea and b) maize.

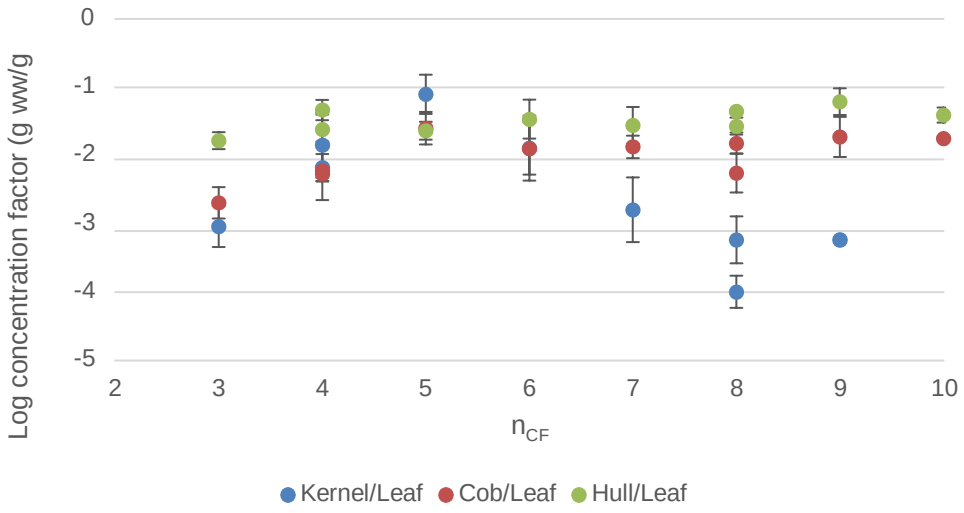


Figure S6: Concentration factors between different maize parts and maize leaves from this study (kg fresh weight per kg fresh weight) plotted against the number of fluorinated carbons (n_{CF}). The mean and standard deviation of the logged concentration factors are shown.

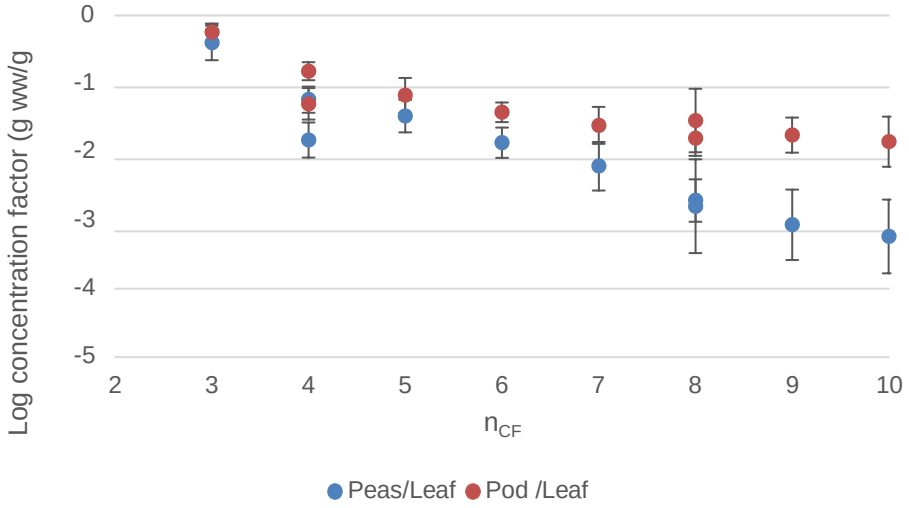


Figure S7: Concentration factors between different pea parts and pea leaves from this study (kg fresh weight per kg fresh weight) plotted against the number of fluorinated carbons (n_{CF}). The mean and standard deviation of the logged concentration factors are shown.

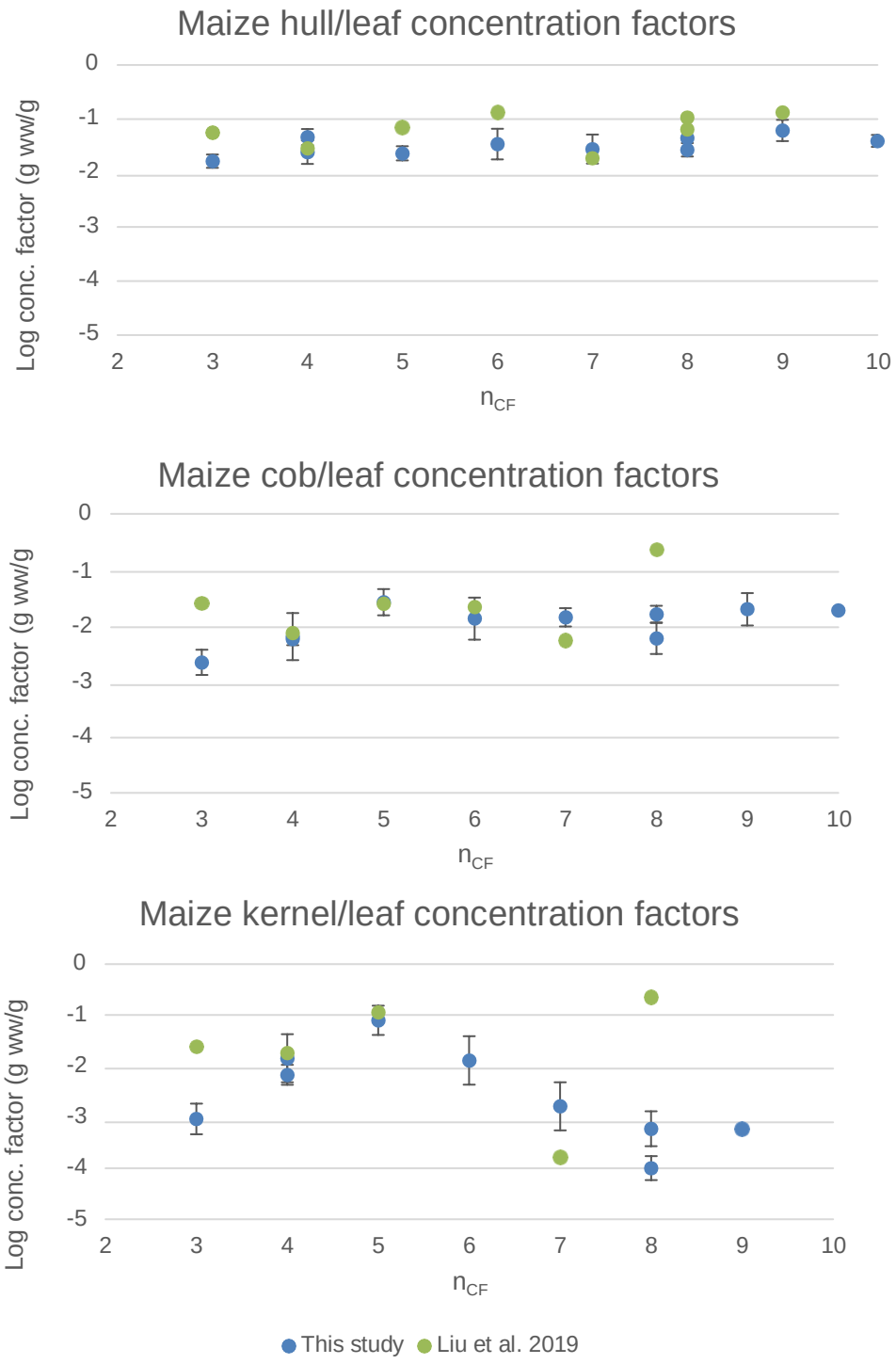
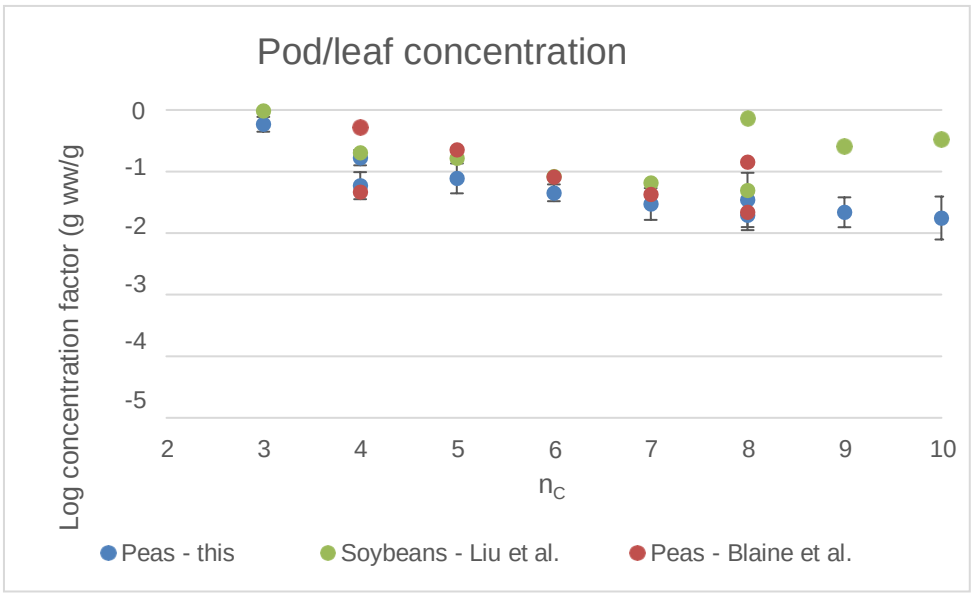


Figure S8: Comparison of concentration factors for maize from this study with those of Liu et al. (2019) plotted against the number of fluorinated carbons (n_{CF}). The concentration factors for this study are wet weight based, while those for Liu et al. are dry weight based. For this study the mean and standard deviation of the logged concentration factors are shown.



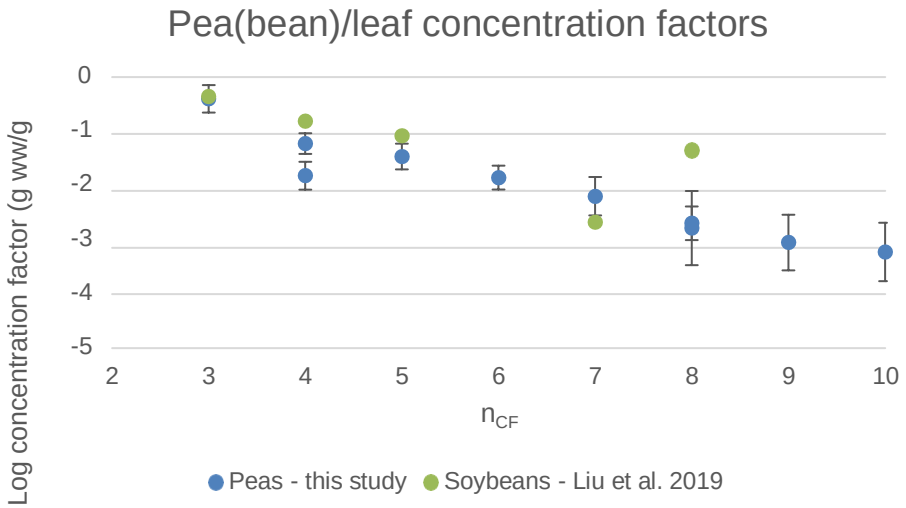


Figure S9: Comparison of concentration factors for peas from this study with peas from Blaine et al. (2014) and soybeans from Liu et al. (2019) plotted against the number of fluorinated carbons (n_{CF}). The data from Blaine et al. provided fruit/shoot concentration factors which were converted to pod/leaf concentration factors using the pea/pod and shoot/leaf fractions from this study. The concentration factors for this study and Blaine et al. are wet weight based, while those for Liu et al. are dry weight based. For this study the mean and standard deviation of the logged concentration factors are shown.

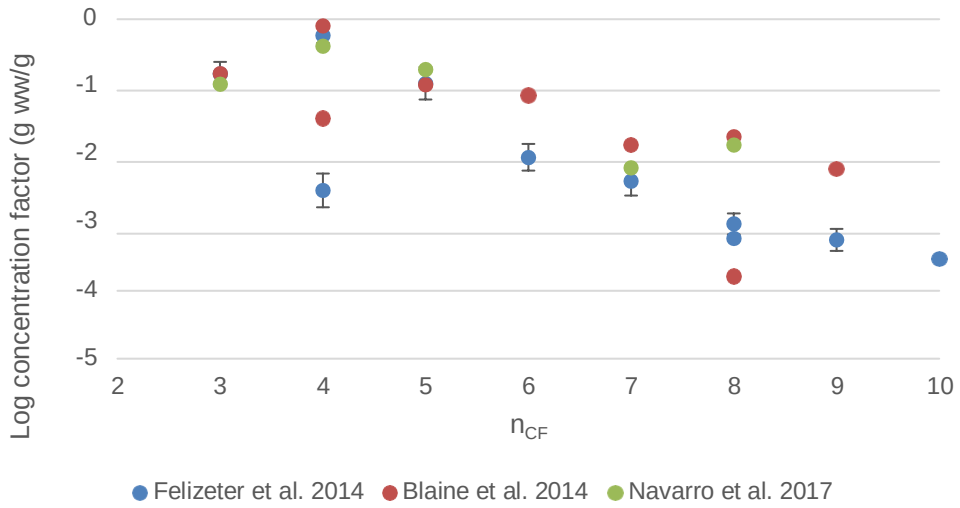


Figure S10: Tomato fruit/leaf concentration factors from 3 studies in the literature plotted against the number of fluorinated carbons (n_{CF}). The data from Blaine et al. are fruit/foliage concentration factors (not fruit/leaf). The concentration factors for Navarro et al. were converted from a dry weight to a wet weight basis using water content data from Blaine et al. For Felizeter et al. the mean and standard deviation of the logged concentration factors are shown.

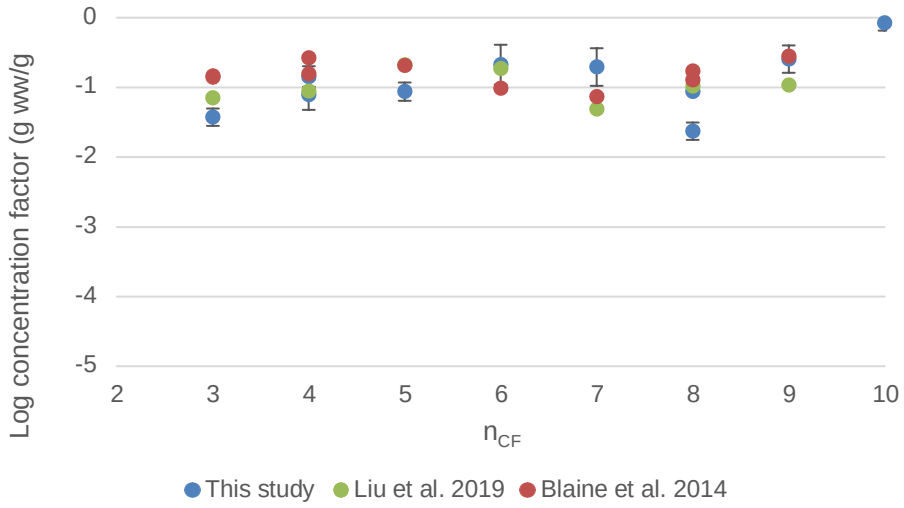


Figure S11: Comparison of radish bulb/shoot concentration factors from this study, Liu et al. (2019) and Blaine et al. (2014). The concentration factors for this study and Blaine et al. are wet weight based, while those for Liu et al. are dry weight based. For this study the mean and standard deviation of the logged concentration factors are shown.

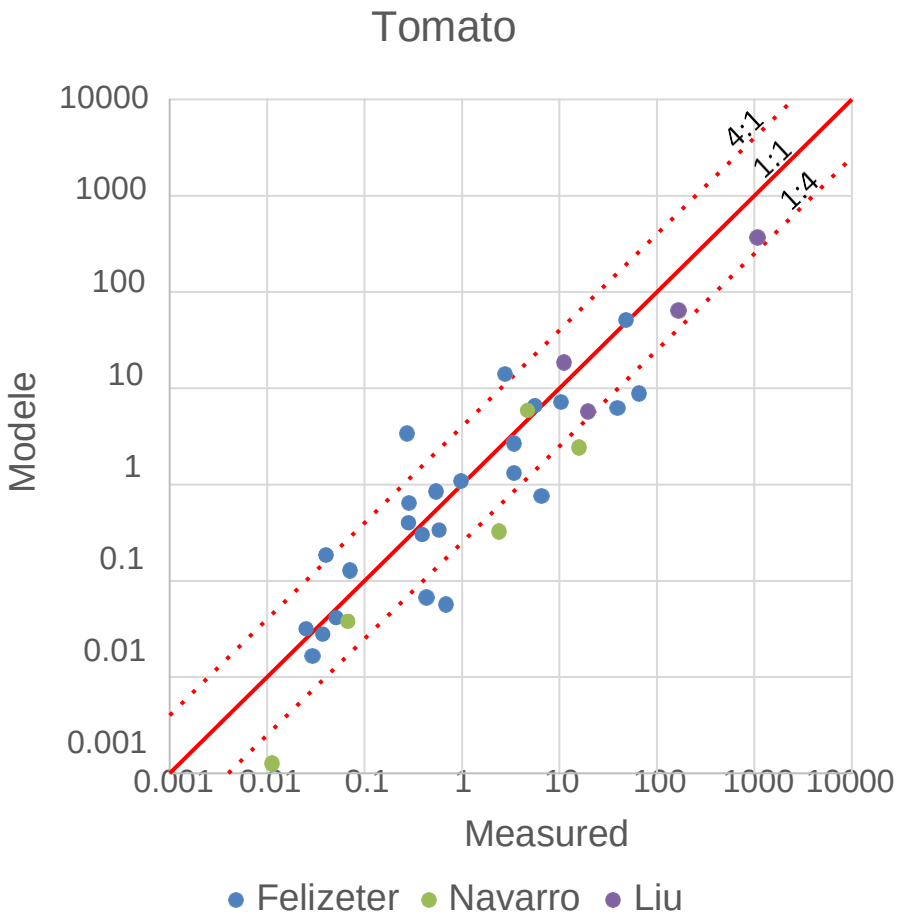


Figure S12: X-Y plots of modeled versus measured PFAA concentration in tomato plants based on data from Felizeter et al. (2014), Navarro et al. (2017) and Liu et al. (2019).

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