SUPPORTING INFORMATION FOR

A new dataset of Polychlorinated Dibenzo-p-Dioxin and Dibenzofuran half-lives: natural attenuation and rhizoremediation using several common plant species in a weathered contaminated soil

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Contains 24 pages, 6 figures and 17 tables

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S1 – MATERIAL AND METHODS

PCDD/F ANALYSIS

10 g or soil were mixed with Diatomaceus Earth and the following ^{13}C labeled internal standards were added: 2,3,7,8 TCDD, 1,2,3,7,8 PeCDD, 1,2,3,4,7,8 HxCDD, 1,2,3,6,7,8 HxCDD, 1,2,3,4,6,7,8 HpCDD OCDD, 2,3,7,8 TCDF, 1,2,3,7,8 PeCDF, 2,3,4,7,8 PeCDF, 1,2,3,4,7,8 HxCDF, 1,2,3,6,7,8 HxCDF, 2,3,4,6,7,8 HxCDF, 1,2,3,7,8,9 HxCDF, 1,2,3,4,6,7,8 HpCDF, 1,2,3,4,7,8,9 HpCDF. Samples were extracted with an Accelerated Solvent Extractor Thermo Scientific DIONEX ASE 350, using toluene and acetone according to this method: temperature, 150°C; heat, 7 min; static time, 7 min; cycles, 2; rinse volume, 60%; purge, 180 s; cell type, SST. Before purification the following clean up standard was added: 2,3,7,8-TCDD ^{37}Cl. The soil and biomass extracts were purified using silica/alumina FMS columns and hexane and dichloromethane as solvents with the FMS POWER-PREP system. Samples were concentrated under N_2 flow and analyzed in HRGC/HRMS (Thermo Scientific TRACE GC ULTRA coupled with Thermo Scientific DFS MS) after ^{13}C labeled internal standards addition (1,2,3,4-TCDD and 1,2,3,7,8,9-HxCDD), using a RTX Dioxin 2 column (60m, 0.25 mm ID, 0.25 mm film thickness) with He as carrier gas at a constant flow of 1 ml min^{-1}. The GC operating conditions were as follows: injector (splitless) temperature 260°C, interface temperature 270°C, initial temperature 130°C, initial time 1 min. The GC temperature program was 130-200 °C at 40 °C min^{-1}, 200-235 °C at 3°C min^{-1}, and final time 25 min. Total run time was The monitored masses were, M+ and M+2 (for tetra and penta Cl classes) and M+2 and M+4 (for hexa, hepta, octa Cl classes). 17 congeners and PCDD/F classes were quantified (**Table S1**).

Table S1 - Measured PCDD/F congeners

PCDDs	2,3,7,8-TCDD
	1,2,3,7,8-PCDD
	1,2,3,4,7,8-HxCDD
	1,2,3,6,7,8-HxCDD
	1,2,3,7,8,9-HxCDD
	1,2,3,4,6,7,8-HpCDD
	OCDD
PCDFs	2,3,7,8-TCDF
	1,2,3,7,8-PCDF
	2,3,4,7,8-PCDF
	1,2,3,4,7,8-HxCDF
	1,2,3,6,7,8-HxCDF
	2,3,4,6,7,8-HxCDF
	1,2,3,7,8,9-HxCDF
	1,2,3,4,6,7,8-HpCDF
	1,2,3,4,7,8,9-HpCDF
	OCDF

SIMULATION SCENARIOS

SELECTED CHEMICALS

Table S2 - Physico-chemical properties of the simulated chemicals

	2,3,7,8-TCDD	1,2,3,4,7,8-HxCDF	OCDD
MW (g mol^{-1})	322	375	460
VP (Pa)	0.0000002	0.000000032	0.00000000011
WS (g m^{-3})	0.0000195	0.00000825	0.0000000740
Log K_{OW}	6.8	7	8.20
HL air (days)	7.08	22.9	22.9
HL soil (days)	972 (2.54 years)	1589 (4.35 years)	1244 (3.41 years)

NOTE: MW, VP, WS, Log K_{OW} and HL air were taken from [1], while for HL soil the results of the current experiment for P3 treatment (*Festuca arundinacea*) were used

AIR, VEGETATION, SOIL COMPARTMENT PARAMETERIZATION

A 40 cm (5 layers of 8 cm each) loamy sand soil characterized by 1.7% organic carbon (OC) and an average DOC concentration in soil water of ~15 mg L^{-1} was simulated. The model domain was set to 1 ha to reproduce an agricultural field of *Festuca arundinacea*. A below ground biomass of 1.932 kg m^{-2} and an above ground biomass of 0.9 kg m^{-2} were assumed [2], while Specific Leaf Area (SLA) and Leaf Area Index (LAI) were set to of 10 m^2 kg^{-1} and a of 9 m^2 m^{-2} respectively [3]. A well-mixed and homogeneous soil was simulated considering a fixed initial concentration for each soil layer at the beginning of the simulation. The initial concentration was set equal to the concentrations in control pots at the beginning of the experiment (**Table S3**). The air compartment structure and surface meteorological parameters (temperature, rainfall and solar radiation) were parameterized as reported in [4]. A clean air compartment was considered at the beginning of the simulations (no background concentration and emission to air), while PM10 background concentration was set to 30 μg m^{-3}.

Table S3 - PCDD/F emissions and initial concentrations in soil

	2,3,7,8-TCDD	OCDD	1,2,3,4,7,8-HxCDF
Emission (mol)	0.00000469	0.00381	0.00164
Initial concentration (pg g^{-1} dw)	1	154	542

S2 – RESULTS AND DISCUSSION

PCDD/F INITIAL CONCENTRATION IN SOIL

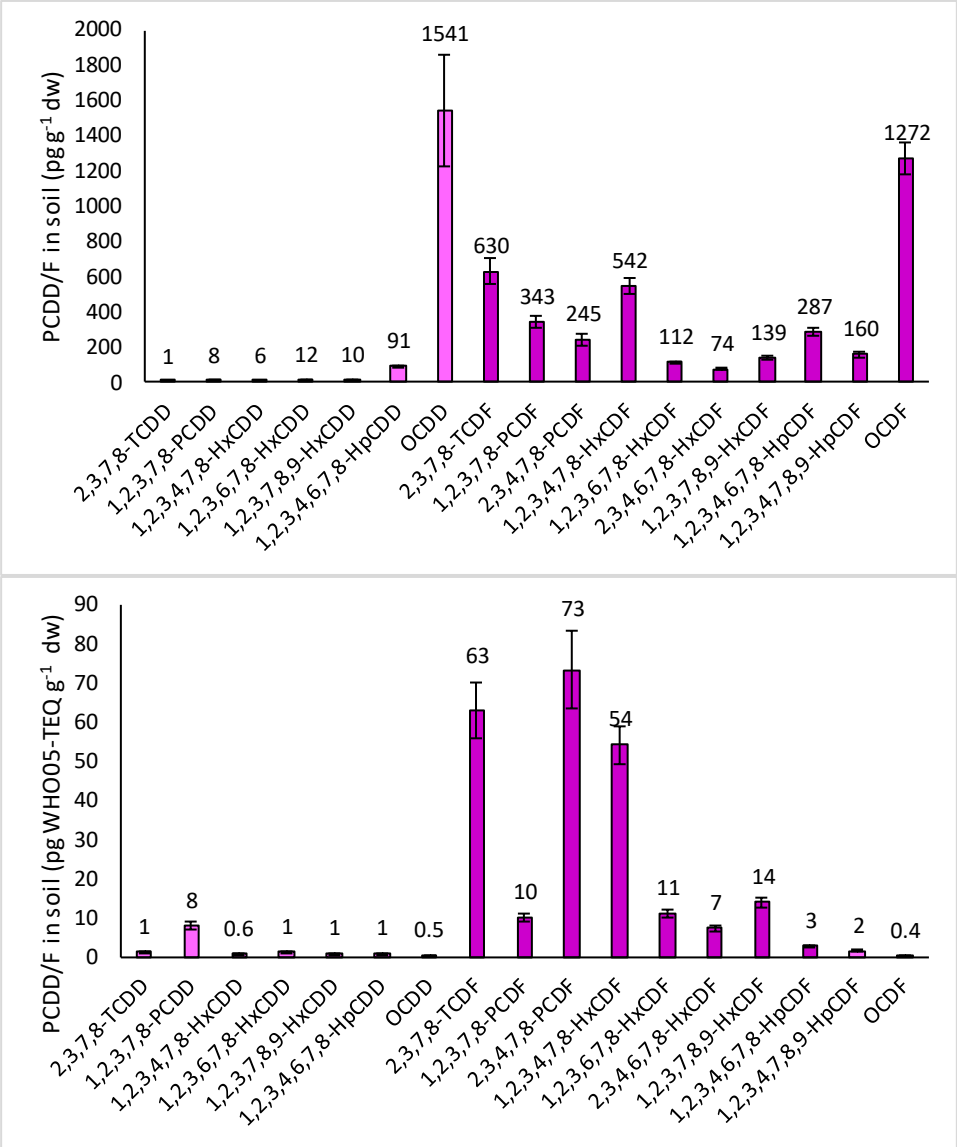

Figure S1. PCDD/F initial concentration in soil at T0 (C1-4). Natural concentrations are represented on the top, while WHO05-TEQ are represented on the bottom. PCDDs are shown in pink while PCDFs are shown in violet. Bars represent standard deviation of 12 replicates

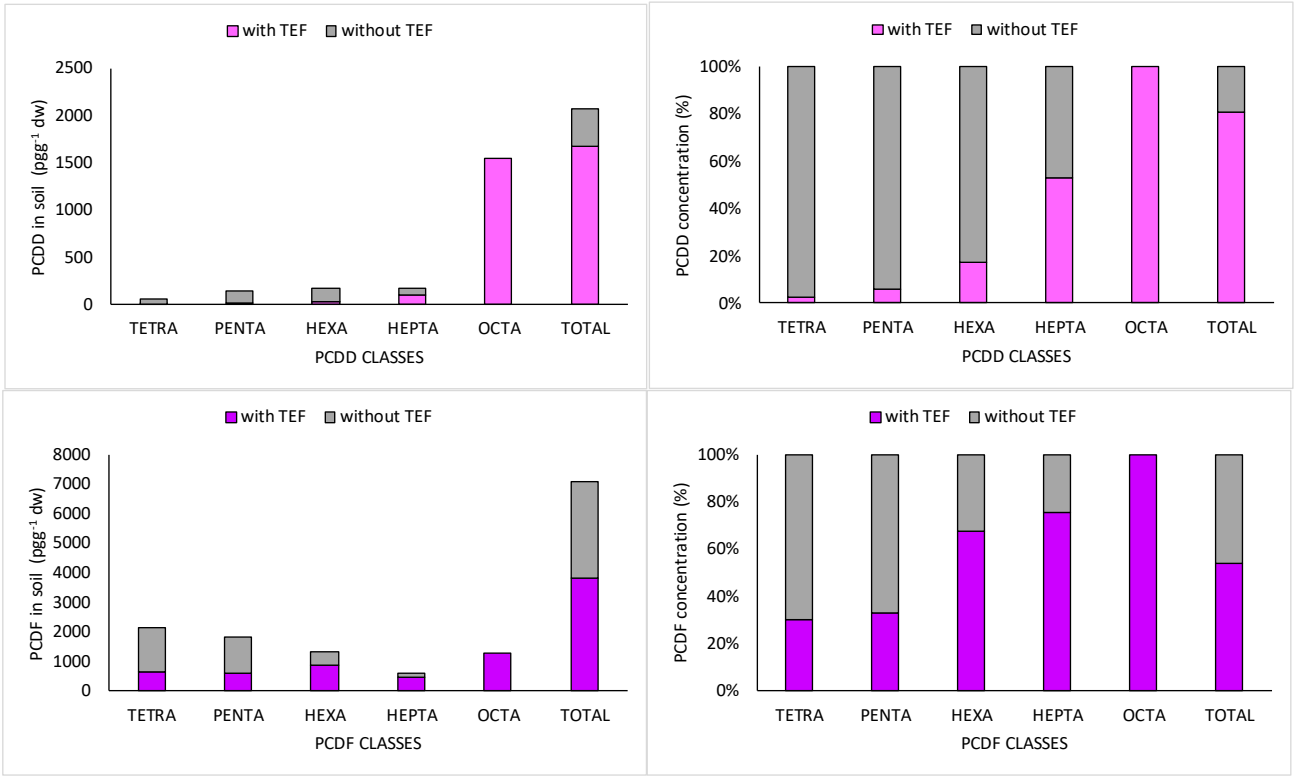

Figure S2. PCDD/F classes initial average concentration in soil at T0 (C1-4). PCDDs with TEF are shown in pink while PCDFs with TEF are shown in violet; congeners without TEF are shown in grey

Table S4 - PCDD/F concentrations in control pots at T0

	PCDD/F concentrations in soil pg g^{-1} dw					
	PCDD		PCDF		PCDD/F	
	Average	Stdev	Average	Stdev	Average	Stdev
C1-4-T0	1670	309	3802	310	5472	497
C5-T0	1802	974	3333	94	5135	890
C6-T0	19	16	16	4	35	6
C7-T0	1479	204	3744	61	5223	262

Table S5 – Single PCDD/F congener comparison between controls (p-values)

	p-values		
	C1-4-T0 vs C5-T0	**C1-4-T0 vs C7-T0**	**C5-T0 vs C7-T0**
2,3,7,8-TCDD	0.07	0.15	0.72
1,2,3,7,8-PCDD	0.14	0.30	0.45
1,2,3,4,7,8-HxCDD	0.14	0.06	0.56
1,2,3,6,7,8-HxCDD	0.44	0.35	0.92
1,2,3,7,8,9-HxCDD	0.36	0.80	0.59
1,2,3,4,6,7,8-HpCDD	0.86	0.64	0.77
OCDD	0.67	0.36	0.60
2,3,7,8-TCDF	0.06	0.80	**0.0003**
1,2,3,7,8-PCDF	**0.02**	0.46	**0.0004**
2,3,4,7,8-PCDF	0.09	0.58	**0.0050**
1,2,3,4,7,8-HxCDF	**0.03**	0.74	**0.03**
1,2,3,6,7,8-HxCDF	**0.02**	0.88	**0.01**
2,3,4,6,7,8-HxCDF	**0.05**	0.80	**0.01**
1,2,3,7,8,9-HxCDF	**0.04**	0.84	**0.05**
1,2,3,4,6,7,8-HpCDF	0.07	0.75	**0.0019**
1,2,3,4,7,8,9-HpCDF	0.09	0.79	0.09
OCDF	**0.02**	0.86	**0.03**
SUM	0.39	0.44	0.88

NOTE: Values in bold represent statistically significant differences in concentrations (α=0.05)

IMPACT OF THE TREATMENTS ON THE ALPHA-DIVERSITY OF THE MICROBIAL COMMUNITIES

Table S6. Student t-test comparison of the bacterial (A) and fungal (B) community structure in the different treatment and control theses at T4. The table includes the p-value calculated comparing the ecological index values for each treatment and the correspondent control. Statistically significant differences are reported in bold. The considered ecological indices are Richness, Diversity (expressed as Shannon index) and Evenness, and their values are reported in Supplementary Figure S3.

(A) Bacterial community			
	Richness	Diversity	Evenness
P1 vs C2	**0.029**	**0.006**	**0.003**
P3 vs C2	**0.002**	0.105	**0.003**
P4 vs C2	**0.001**	0.935	0.107
P7 vs C2	**0.028**	0.935	0.574
P9 vs C2	0.079	**0.003**	**0.007**
P2 vs C3	**0.031**	0.255	0.072
P5 vs C3	**0.002**	0.533	0.081
P10 vs C4	**0.037**	0.200	0.398
P6 vs C5	**0.027**	0.690	0.797
P8 vs C7	0.392	**0.046**	**0.018**
(B) Fungal community			
	Richness	Diversity	Evenness
P1 vs C2	0.383	**0.011**	**0.027**
P3 vs C2	0.385	**0.019**	0.058
P4 vs C2	0.568	**0.049**	0.118
P7 vs C2	0.769	**0.043**	0.416
P9 vs C2	0.394	0.686	0.698
P2 vs C3	0.973	0.699	0.386
P5 vs C3	0.246	0.603	0.342
P10 vs C4	0.892	0.859	0.371
P6 vs C5	0.155	0.149	0.401
P8 vs C7	0.926	0.552	0.306

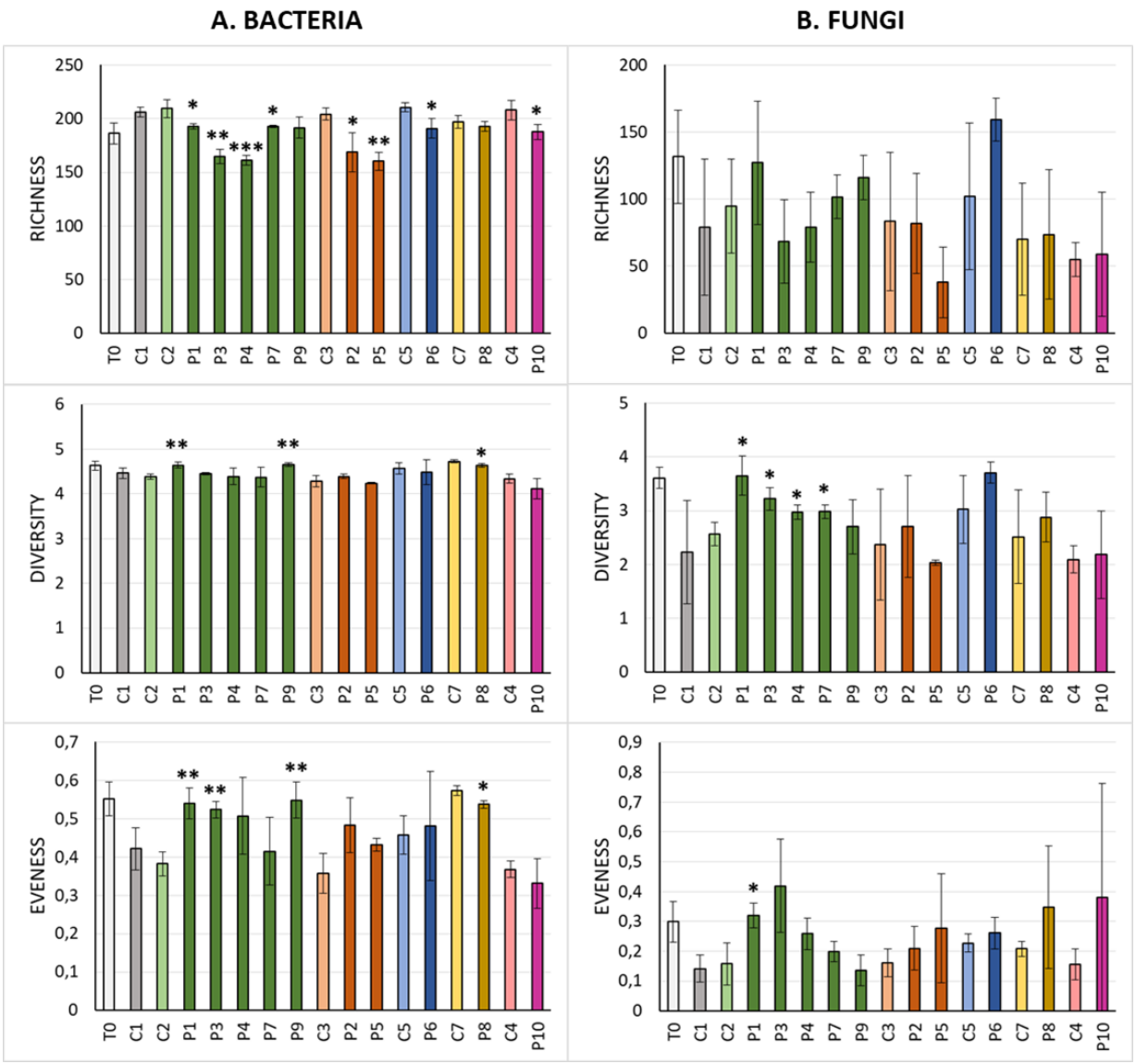

Figure S3. Richness, Diversity and Evenness of the bacterial and fungal communities at T4. Diversity indices of the bacteria communities are represented on the left (A) while those of the fungal communities are represented on the right (B). Different treatments and the correspondent control at T4 are indicated by the same color in the chart. The white bar represents the data of the bacterial (A) and fungal (B) communities dwelling the soil before treatment (T0). Asterisks indicate the significant differences between treatments and controls at T4 according to the Student-t test (*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$).

NATURAL ATTENUATION EFFECT

Table S7 - Natural attenuation effect: C-T0 vs C-T2 (significant reduction in grey, ns: not significant, s: significant)

	PCDD/F concentration reduction (%): C-T0 vs C-T2 (NA_{T2})									
	C1-4-T0 vs C2-T2		C1-4-T0 vs C3-T2		C1-4-T0 vs C4-T2		C5-T0 vs C5-T2		C7-T0 vs C7-T2	
2,3,7,8-TCDD	ns	-6.38	ns	32.17	ns	10.39	ns	34.45	ns	13.92
1,2,3,7,8-PCDD	ns	1.88	ns	39.69	ns	-6.72	ns	16.92	ns	17.54
1,2,3,4,7,8-HxCDD	ns	-6.51	ns	36.60	ns	-7.13	ns	4.53	ns	12.97
1,2,3,6,7,8-HxCDD	ns	-4.02	ns	67.42	ns	0.12	ns	9.62	ns	5.93
1,2,3,7,8,9-HxCDD	ns	11.00	ns	79.92	ns	9.22	ns	14.57	ns	13.55
1,2,3,4,6,7,8-HpCDD	ns	-5.59	ns	41.86	ns	-0.79	ns	-3.89	ns	8.27
OCDD	ns	5.58	ns	19.93	ns	7.02	ns	12.56	ns	180.36
2,3,7,8-TCDF	s	-19.63	s	-13.90	s	-13.75	s	-8.04	s	-10.76
1,2,3,7,8-PCDF	ns	1.68	ns	7.64	ns	6.94	ns	13.90	ns	9.11
2,3,4,7,8-PCDF	ns	10.16	ns	16.06	ns	13.55	ns	24.03	ns	16.05
1,2,3,4,7,8-HxCDF	ns	-0.10	ns	8.35	ns	1.87	ns	6.83	ns	8.00
1,2,3,6,7,8-HxCDF	ns	-3.44	ns	1.23	ns	-3.79	ns	-1.26	ns	-0.96
2,3,4,6,7,8-HxCDF	ns	-3.71	ns	4.32	ns	-1.85	ns	0.90	ns	0.21
1,2,3,7,8,9-HxCDF	ns	-9.60	ns	-5.10	ns	-5.40	ns	-7.32	ns	-6.89
1,2,3,4,6,7,8-HpCDF	ns	-12.64	ns	1.69	s	-7.14	ns	-3.19	ns	-2.76
1,2,3,4,7,8,9-HpCDF	ns	-5.15	ns	0.22	ns	-3.20	ns	-4.25	ns	0.84
OCDF	ns	39.43	ns	46.54	ns	31.52	ns	20.71	ns	19.18
SUM	ns	7.76	ns	18.00	ns	8.22	ns	9.74	ns	52.16

Table S8 - Natural attenuation effect: C-T0 vs C-T4 (significant reduction in grey, ns: not significant, s: significant)

	PCDD/F concentration reduction (%): C-T0 vs C-T4 (NA_{T4})									
	C1-4-T0 vs C2-T4		C1-4-T0 vs C3-T4		C1-4-T0 vs C4-T4		C5-T0 vs C5-T4		C7-T0 vs C7-T4	
2,3,7,8-TCDD	ns	-14.14	ns	-11.64	ns	-9.89	s	-29.30	ns	-8.52
1,2,3,7,8-PCDD	ns	-3.38	ns	2.25	ns	-11.27	ns	-3.87	ns	6.56
1,2,3,4,7,8-HxCDD	ns	-2.64	ns	-9.60	ns	-10.48	ns	-22.11	ns	-3.44
1,2,3,6,7,8-HxCDD	ns	-12.10	ns	-7.94	ns	-5.01	ns	-20.24	ns	-7.07
1,2,3,7,8,9-HxCDD	ns	-12.87	ns	-1.93	ns	-9.75	ns	-18.68	s	-19.24
1,2,3,4,6,7,8-HpCDD	s	-13.71	ns	-2.47	s	-6.86	ns	-22.67	s	-12.07
OCDD	ns	-20.58	ns	10.69	ns	-6.85	ns	-42.50	ns	-4.97
2,3,7,8-TCDF	s	-10.96	ns	0.33	ns	13.70	s	-16.09	s	-10.97
1,2,3,7,8-PCDF	ns	-8.27	ns	5.82	ns	10.59	s	-16.86	s	-7.02
2,3,4,7,8-PCDF	ns	-10.43	ns	4.02	ns	29.08	s	-15.79	ns	-5.93
1,2,3,4,7,8-HxCDF	ns	-1.52	ns	-2.56	ns	3.80	ns	-17.62	ns	3.87
1,2,3,6,7,8-HxCDF	ns	-2.17	ns	-1.70	ns	5.28	s	-18.84	ns	2.29
2,3,4,6,7,8-HxCDF	ns	-5.81	ns	-1.86	ns	10.62	ns	-16.10	ns	-1.44
1,2,3,7,8,9-HxCDF	ns	5.55	ns	-0.74	ns	6.67	ns	-18.11	ns	16.01
1,2,3,4,6,7,8-HpCDF	ns	-4.03	s	-7.78	ns	-1.24	s	-16.50	ns	-4.07
1,2,3,4,7,8,9-HpCDF	ns	17.20	ns	1.12	ns	-6.18	ns	-10.86	ns	23.24
OCDF	ns	-3.54	s	-13.18	ns	-7.30	ns	-20.40	s	-14.46
SUM	ns	-9.00	ns	-0.25	ns	0.29	ns	-25.96	ns	-5.68

RHIZOREMEDIATION EFFECT

Table S9 - Rhizoremediation effect: C-T2 vs P-T2 (significant reduction in grey, ns: not significant, s: significant)

	PCDD/F concentration reduction (%): C-T2 vs P-T2 (RR_{T2})																	
	C2-T2 vs P1-T2		C2-T2 vs P3-T2		C2-T2 vs P4-T2		C2-T2 vs P7-T2		C2-T2 vs P9-T2		C3-T2 vs P2-T2		C3-T2 vs P5-T2		C4-T2 vs P10-T2		C5-T2 vs P6-T2		C7-T2 vs P8-T2	
2,3,7,8-TCDD	ns	33.96	ns	16.04	ns	21.12	ns	15.51	ns	21.93	ns	-17.42	ns	-15.15	ns	0.23	ns	-1.67	ns	5.99
1,2,3,7,8-PCDD	ns	1.39	ns	8.64	ns	4.42	ns	6.27	ns	5.57	ns	-18.67	ns	-26.08	ns	7.96	ns	-28.55	ns	-2.56
1,2,3,4,7,8-HxCDD	ns	7.78	ns	6.73	ns	7.00	ns	-3.64	ns	9.87	ns	-14.99	ns	-25.33	ns	8.55	ns	-11.51	ns	-6.55
1,2,3,6,7,8-HxCDD	ns	7.82	ns	3.48	ns	8.25	ns	-2.08	ns	11.73	ns	-31.18	ns	-37.50	ns	3.26	ns	-15.32	ns	-4.30
1,2,3,7,8,9-HxCDD	ns	1.36	ns	0.74	ns	7.26	ns	-1.45	ns	6.27	ns	-24.81	ns	-41.89	ns	4.68	ns	-7.96	ns	-4.34
1,2,3,4,6,7,8-HpCDD	ns	5.07	ns	4.88	ns	3.09	ns	5.61	ns	10.28	ns	-20.57	ns	-29.51	ns	3.43	ns	-10.70	ns	-11.96
OCDD	ns	-10.40	ns	-12.75	ns	-12.68	ns	36.81	ns	2.10	ns	22.99	ns	-18.43	ns	-13.83	ns	-39.21	ns	-60.59
2,3,7,8-TCDF	ns	10.01	ns	-0.70	ns	1.20	ns	6.42	ns	21.06	ns	4.65	ns	1.41	ns	4.42	ns	-22.47	ns	-0.50
1,2,3,7,8-PCDF	ns	5.41	ns	1.38	ns	5.47	ns	22.20	ns	13.71	ns	5.93	ns	-1.30	ns	3.66	ns	-16.53	ns	-0.90
2,3,4,7,8-PCDF	ns	3.45	ns	3.20	ns	4.71	ns	2.90	ns	22.00	ns	5.40	ns	-1.45	ns	3.17	ns	-16.01	ns	-2.32
1,2,3,4,7,8-HxCDF	ns	7.34	ns	1.00	ns	1.73	ns	10.41	ns	12.78	ns	1.91	ns	-3.74	ns	4.85	ns	-18.07	ns	-0.15
1,2,3,6,7,8-HxCDF	ns	8.38	ns	0.11	ns	-2.16	ns	8.85	ns	8.21	ns	4.33	ns	-2.08	ns	6.01	ns	-14.54	ns	0.99
2,3,4,6,7,8-HxCDF	ns	5.46	ns	1.02	ns	-1.27	ns	4.21	ns	11.66	ns	2.55	ns	-5.40	ns	0.75	ns	-16.98	ns	-4.12
1,2,3,7,8,9-HxCDF	ns	4.34	ns	-0.18	ns	0.56	ns	19.98	ns	13.23	ns	13.29	ns	-0.27	ns	3.50	ns	-11.77	ns	3.11
1,2,3,4,6,7,8-HpCDF	ns	6.86	ns	4.27	ns	4.45	ns	6.37	ns	13.87	ns	-2.55	ns	-7.81	ns	2.16	ns	-16.50	ns	-1.49
1,2,3,4,7,8,9-HpCDF	ns	-0.13	ns	3.03	ns	-2.11	ns	1.56	ns	17.65	ns	6.59	ns	-2.39	ns	5.35	ns	-13.43	ns	3.01
OCDF	ns	-15.91	ns	-17.96	ns	-16.68	ns	-13.22	ns	-1.81	ns	-9.63	ns	-16.36	ns	5.14	ns	0.16	ns	-3.11
SUM	ns	-4.93	ns	-8.29	ns	-7.53	ns	10.17	ns	6.65	ns	4.73	ns	-11.78	ns	-0.65	ns	-20.47	ns	-29.85

Table S10 - Rhizoremediation effect: C-T4 vs P-T4 (significant reduction in grey, ns: not significant, s: significant)

	PCDD/F concentration reduction (%): C-T4 vs P-T4 (RR_{T4})																	
	C2-T4 vs P1-T4		C2-T4 vs P3-T4		C2-T4 vs P4-T4		C2-T4 vs P7-T4		C2-T4 vs P9-T4		C3-T4 vs P2-T4		C3-T4 vs P5-T4		C4-T4 vs P10-T4		C5-T4 vs P6-T4		C7-T4 vs P8-T4	
2,3,7,8-TCDD	ns	8.16	ns	-11.37	ns	-0.29	ns	18.08	ns	13.99	ns	11.05	ns	-0.85	ns	13.33	ns	12.10	ns	18.01
1,2,3,7,8-PCDD	ns	-5.01	ns	-13.39	ns	-1.12	ns	6.22	ns	1.73	ns	-0.08	ns	-3.88	ns	0.00	ns	-13.68	ns	2.74
1,2,3,4,7,8-HxCDD	ns	-8.05	ns	-18.43	ns	-18.75	ns	-3.50	ns	-0.11	ns	-1.88	ns	1.03	ns	2.53	ns	-13.13	ns	14.17
1,2,3,6,7,8-HxCDD	ns	10.60	ns	-5.08	ns	12.31	ns	5.95	ns	8.23	ns	5.80	ns	-7.20	ns	-1.73	ns	-5.50	ns	13.76
1,2,3,7,8,9-HxCDD	ns	5.63	ns	1.30	ns	16.57	ns	10.19	ns	18.93	ns	4.41	ns	-2.17	ns	6.91	ns	1.59	ns	17.90
1,2,3,4,6,7,8-HpCDD	ns	5.25	ns	-0.97	ns	9.34	ns	7.16	ns	5.76	ns	-5.04	ns	-8.92	ns	4.15	ns	-5.25	ns	6.43
OCDD	ns	19.49	ns	2.77	ns	4.34	ns	2.31	ns	7.24	ns	-19.11	ns	-23.28	ns	20.70	ns	48.86	ns	1.74
2,3,7,8-TCDF	ns	-4.37	ns	-0.33	ns	2.26	ns	1.73	ns	4.54	ns	-8.12	ns	-7.04	ns	-19.24	ns	9.03	ns	11.98
1,2,3,7,8-PCDF	ns	-4.45	ns	-11.32	ns	-4.14	ns	2.67	ns	4.51	ns	-11.98	ns	-15.98	ns	-14.40	ns	3.90	ns	8.28
2,3,4,7,8-PCDF	ns	0.31	ns	-6.15	ns	-2.42	ns	4.15	ns	9.62	ns	-11.69	ns	-14.84	ns	-26.96	ns	2.57	ns	10.95
1,2,3,4,7,8-HxCDF	ns	-9.19	ns	-13.39	ns	-9.25	ns	-2.47	ns	-3.27	ns	-1.72	ns	-6.04	ns	-7.82	ns	0.16	ns	-8.09
1,2,3,6,7,8-HxCDF	ns	-9.42	ns	-14.07	ns	-7.44	ns	-4.45	ns	-3.50	ns	-0.75	ns	-6.38	ns	-7.19	ns	0.74	ns	-6.19
2,3,4,6,7,8-HxCDF	ns	-4.02	ns	-9.75	ns	-4.52	ns	2.18	ns	3.08	ns	-2.19	ns	-5.80	ns	-12.62	ns	-1.30	ns	-1.69
1,2,3,7,8,9-HxCDF	ns	-14.08	ns	-18.60	ns	-14.19	ns	-10.38	ns	-3.83	ns	-3.91	ns	-8.39	ns	-8.84	ns	0.46	ns	-21.13
1,2,3,4,6,7,8-HpCDF	ns	-3.48	ns	-8.32	ns	-2.74	ns	0.32	ns	-1.21	ns	3.70	ns	0.18	ns	-1.28	ns	-3.22	ns	-0.17
1,2,3,4,7,8,9-HpCDF	ns	-19.77	ns	-25.76	ns	-20.68	ns	-17.05	ns	-15.46	ns	-4.54	ns	-8.72	ns	6.48	ns	-9.68	ns	-25.62
OCDF	ns	-6.12	s	-20.31	ns	-2.55	ns	3.89	ns	-2.84	ns	9.84	ns	5.02	ns	11.77	ns	6.16	ns	14.25
SUM	ns	0.02	s	-9.27	ns	-2.06	ns	0.96	ns	1.30	ns	-6.59	ns	-10.25	ns	1.69	ns	14.71	ns	3.27

OVERALL EFFECT

Table S11 - Overall effect: C-T0 vs P-T2 (significant reduction in grey, ns: not significant, s: significant)

	PCDD/F concentration reduction (%): C-T0 vs P-T2 ($NA_{T2} + RR_{T2}$)																			
	C1-4-T0 vs P1-T2		C1-4-T0 vs P3-T2		C1-4-T0 vs P4-T2		C1-4-T0 vs P7-T2		C1-4-T0 vs P9-T2		C1-4-T0 vs P2-T2		C1-4-T0 vs P5-T2		C1-4-T0 vs P10-T2		C5-T0 vs P6-T2		C7-T2 vs P8-T2	
2,3,7,8-TCDD	ns	25.41	ns	8.64	ns	13.39	ns	8.14	ns	14.14	ns	9.14	ns	12.14	ns	10.64	ns	32.20	ns	20.74
1,2,3,7,8-PCDD	ns	3.30	ns	10.68	ns	6.39	ns	8.26	ns	7.55	ns	13.61	ns	3.26	ns	0.71	ns	-16.46	ns	14.53
1,2,3,4,7,8-HxCDD	ns	0.76	ns	-0.22	ns	0.04	ns	-9.91	ns	2.72	ns	16.13	ns	2.00	ns	0.81	ns	-7.50	ns	5.57
1,2,3,6,7,8-HxCDD	ns	3.49	ns	-0.68	ns	3.90	ns	-6.02	ns	7.24	ns	15.21	ns	4.64	ns	3.38	ns	-7.18	ns	1.37
1,2,3,7,8,9-HxCDD	ns	12.51	ns	11.82	ns	19.06	ns	9.39	ns	17.96	ns	35.28	ns	4.55	ns	14.32	ns	5.45	ns	8.62
1,2,3,4,6,7,8-HpCDD	ns	-0.80	ns	-0.97	ns	-2.67	ns	-0.29	ns	4.12	ns	12.68	ns	-0.01	ns	2.61	ns	-14.18	ns	-4.68
OCDD	ns	-5.40	ns	-7.88	ns	-7.81	ns	44.44	ns	7.80	ns	47.50	ns	-2.18	ns	-7.79	ns	-31.57	ns	10.49
2,3,7,8-TCDF	s	-11.59	s	-20.20	s	-18.67	s	-14.47	ns	-2.71	s	-9.90	s	-12.69	ns	-9.93	s	-28.70	s	-11.20
1,2,3,7,8-PCDF	ns	7.19	ns	3.08	ns	7.25	ns	24.26	ns	15.62	ns	14.03	ns	6.25	ns	10.86	ns	-4.92	s	8.13
2,3,4,7,8-PCDF	ns	13.96	ns	13.69	ns	15.35	ns	13.36	ns	34.40	ns	22.33	ns	14.38	ns	17.15	ns	4.17	ns	13.36
1,2,3,4,7,8-HxCDF	ns	7.23	ns	0.90	ns	1.63	ns	10.30	ns	12.66	ns	10.42	ns	4.29	ns	6.80	ns	-12.48	ns	7.83
1,2,3,6,7,8-HxCDF	ns	4.65	ns	-3.33	ns	-5.53	ns	5.10	ns	4.48	ns	5.61	ns	-0.88	ns	1.99	ns	-15.61	ns	0.02
2,3,4,6,7,8-HxCDF	ns	1.56	ns	-2.73	ns	-4.93	ns	0.35	ns	7.52	ns	6.98	ns	-1.31	ns	-1.11	ns	-16.24	ns	-3.92
1,2,3,7,8,9-HxCDF	ns	-5.68	ns	-9.76	ns	-9.09	ns	8.46	ns	2.36	ns	7.50	ns	-5.36	ns	-2.09	s	-18.23	ns	-4.00
1,2,3,4,6,7,8-HpCDF	ns	-6.65	s	-8.91	ns	-8.76	ns	-7.08	ns	-0.53	ns	-0.90	ns	-6.26	ns	-5.14	s	-19.17	ns	-4.21
1,2,3,4,7,8,9-HpCDF	ns	-5.27	ns	-2.27	ns	-7.14	ns	-3.67	ns	11.59	ns	6.82	ns	-2.18	ns	1.98	s	-17.10	ns	3.88
OCDF	ns	17.25	ns	14.39	ns	16.18	ns	21.01	ns	36.90	ns	32.43	ns	22.56	ns	38.27	ns	20.91	ns	15.47
SUM	ns	2.44	ns	-1.17	ns	-0.35	ns	18.72	ns	14.93	ns	23.59	ns	4.10	ns	7.52	ns	-12.72	ns	6.74

Table S12- Overall effect: C-T0 vs P-T4 (significant reduction in grey, ns: not significant, s: significant)

	PCDD/F concentration reduction (%): C-T0 vs P-T4 ($NA_{T4} + RR_{T4}$)																			
	C1-4-T0 vs P1-T4		C1-4-T0 vs P3-T4		C1-4-T0 vs P4-T4		C1-4-T0 vs P7-T4		C1-4-T0 vs P9-T4		C1-4-T0 vs P2-T4		C1-4-T0 vs P5-T4		C1-4-T0 vs P10-T4		C5-T0 vs P6-T4		C7-T2 vs P8-T4	
2,3,7,8-TCDD	ns	-7.13	s	-23.90	ns	-14.39	ns	1.38	ns	-2.13	ns	-1.88	ns	-12.39	ns	2.13	ns	-20.74	ns	7.95
1,2,3,7,8-PCDD	ns	-8.22	ns	-16.32	ns	-4.47	ns	2.63	ns	-1.71	ns	2.17	ns	-1.71	ns	-11.27	s	-17.02	ns	9.48
1,2,3,4,7,8-HxCDD	ns	-10.48	s	-20.59	s	-20.90	ns	-6.05	ns	-2.75	ns	-11.31	ns	-8.68	ns	-8.21	s	-32.34	ns	10.25
1,2,3,6,7,8-HxCDD	ns	-2.79	s	-16.57	ns	-1.28	ns	-6.87	ns	-4.87	ns	-2.60	s	-14.57	ns	-6.65	ns	-24.62	ns	5.72
1,2,3,7,8,9-HxCDD	ns	-7.96	ns	-11.74	ns	1.57	ns	-3.99	ns	3.63	ns	2.39	ns	-4.05	ns	-3.51	ns	-17.38	ns	-4.78
1,2,3,4,6,7,8-HpCDD	s	-9.18	s	-14.55	ns	-5.65	s	-7.53	ns	-8.74	ns	-7.39	ns	-11.17	ns	-3.00	ns	-26.73	ns	-6.42
OCDD	ns	-5.11	ns	-18.39	ns	-17.14	ns	-18.75	ns	-14.83	ns	-10.46	ns	-15.08	ns	12.44	ns	-14.40	ns	-3.32
2,3,7,8-TCDF	s	-14.85	s	-11.26	ns	-8.95	s	-9.42	ns	-6.92	s	-7.81	ns	-6.73	s	-8.18	ns	-8.51	ns	-0.30
1,2,3,7,8-PCDF	s	-12.35	s	-18.65	s	-12.07	ns	-5.82	ns	-4.13	ns	-6.85	ns	-11.08	ns	-5.33	ns	-13.62	ns	0.68
2,3,4,7,8-PCDF	s	-10.15	s	-15.94	s	-12.60	ns	-6.72	ns	-1.81	ns	-8.14	ns	-11.41	ns	-5.72	s	-13.62	ns	4.37
1,2,3,4,7,8-HxCDF	s	-10.57	s	-14.71	s	-10.63	ns	-3.95	ns	-4.74	ns	-4.24	ns	-8.45	ns	-4.32	s	-17.49	ns	-4.53
1,2,3,6,7,8-HxCDF	s	-11.39	s	-15.94	s	-9.45	s	-6.52	ns	-5.60	ns	-2.44	ns	-7.97	ns	-2.29	s	-18.24	ns	-4.04
2,3,4,6,7,8-HxCDF	s	-9.59	s	-14.99	s	-10.06	ns	-3.75	ns	-2.91	ns	-4.00	ns	-7.54	ns	-3.34	s	-17.19	ns	-3.10
1,2,3,7,8,9-HxCDF	s	-9.31	s	-14.08	s	-9.43	ns	-5.41	ns	1.50	ns	-4.62	ns	-9.07	ns	-2.76	s	-17.74	ns	-8.51
1,2,3,4,6,7,8-HpCDF	s	-7.37	s	-12.02	s	-6.66	ns	-3.73	ns	-5.19	ns	-4.37	ns	-7.61	ns	-2.51	s	-19.19	ns	-4.23
1,2,3,4,7,8,9-HpCDF	ns	-5.97	s	-13.00	ns	-7.04	ns	-2.79	ns	-0.92	ns	-3.46	ns	-7.70	ns	-0.11	s	-19.49	ns	-8.34
OCDF	ns	-9.45	s	-23.13	ns	-6.00	ns	0.21	ns	-6.28	ns	-4.64	ns	-8.82	ns	3.61	ns	-15.50	ns	-2.27
SUM	s	-8.97	s	-17.44	s	-10.88	s	-8.12	ns	-7.81	ns	-6.82	ns	-10.47	ns	1.99	ns	-15.07	ns	-2.60

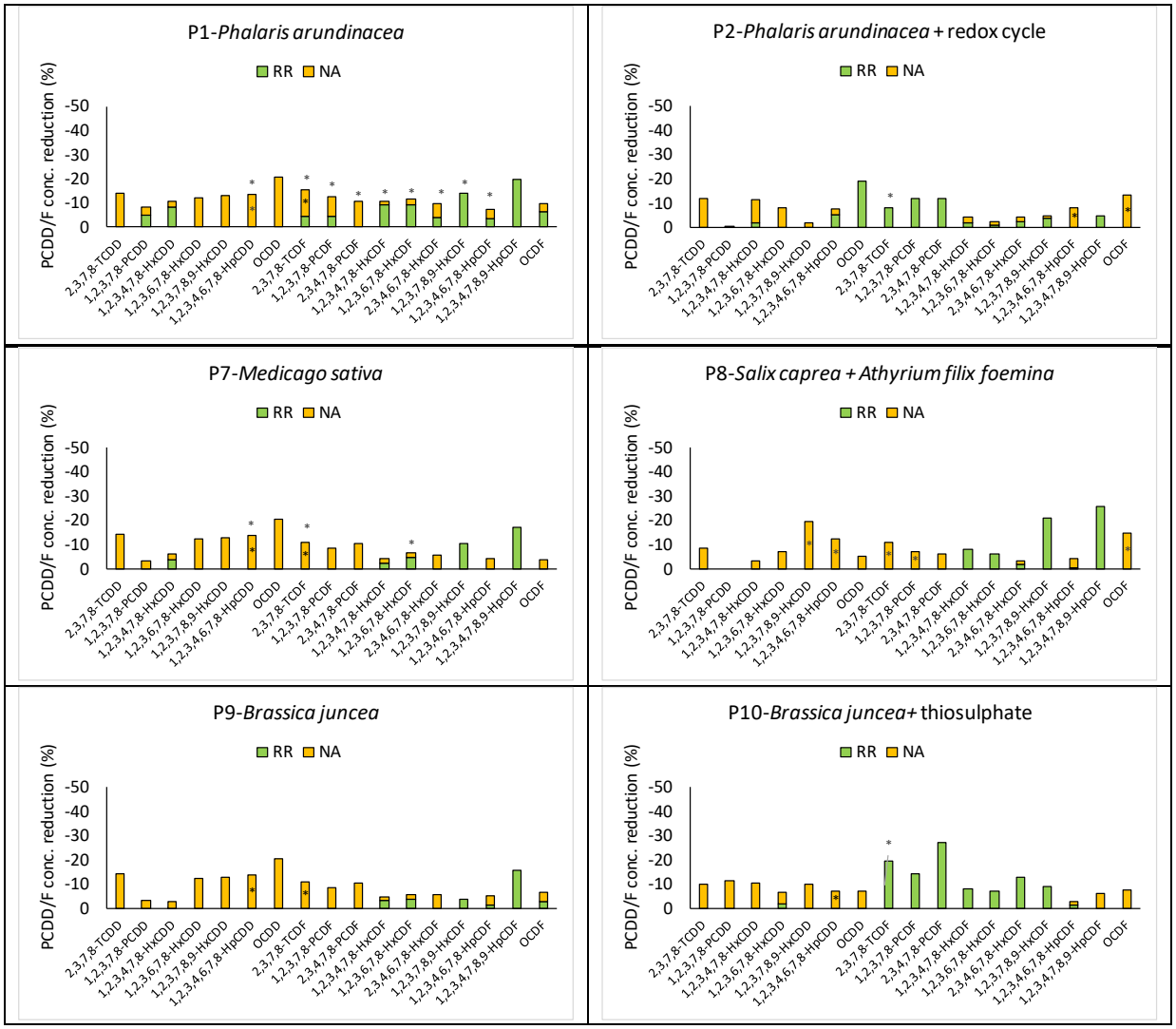

Figure S4. Contribution of natural attenuation (NA) and rhizoremediation (RR) to the overall PCDD/F concentration reduction at T4. Asterisks indicate statistically significant reduction for NA (when contained in the orange bar), for RR (when contained in the green bar), overall (when the asterisk is above the bar). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article)

CONTROL COMPARISON: UNFERTILIZED vs. FERTILIZED

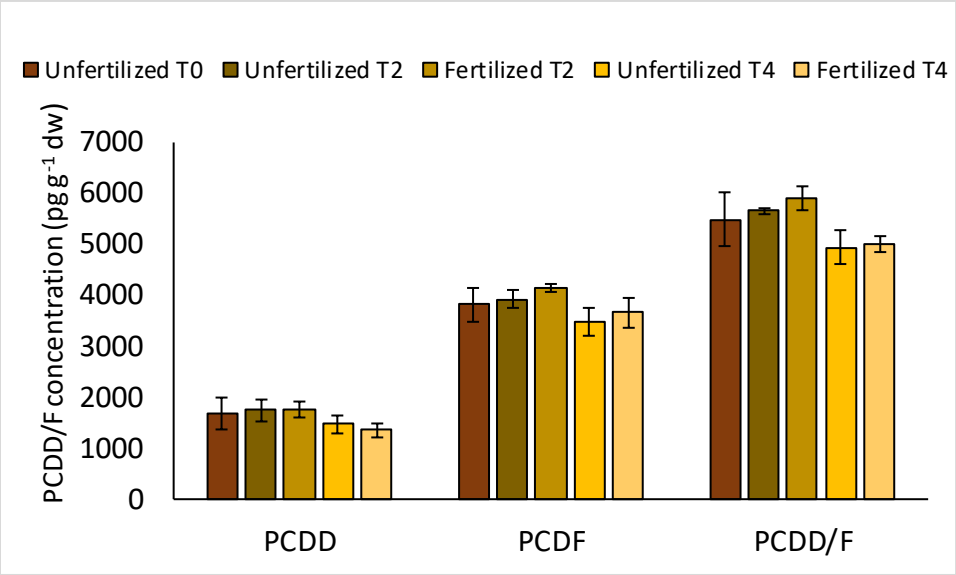

Figure S5. PCDD/F concentrations in unfertilized and fertilized controls during the experiment (T0, T2 and T4)

HALF-LIVES

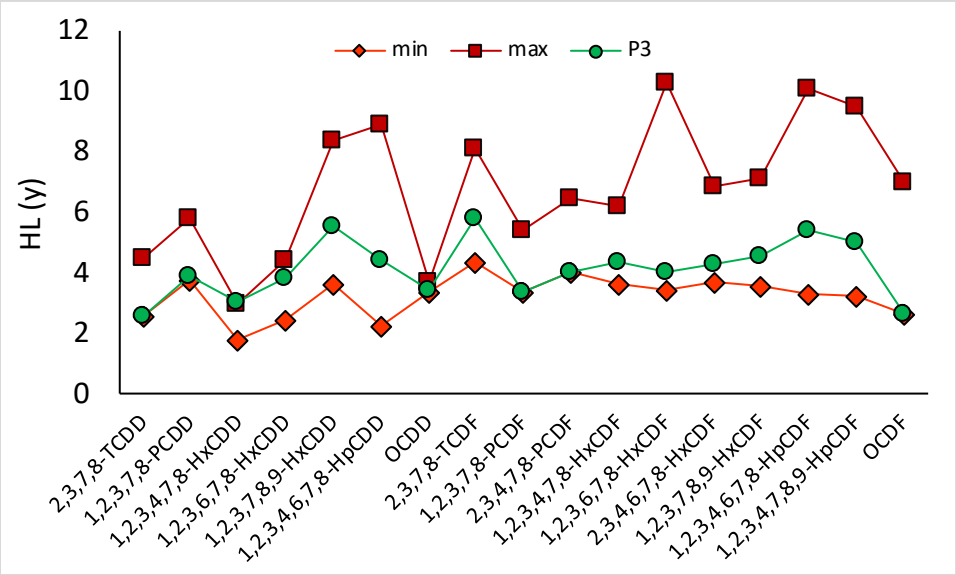

Figure S6. PCDD/F half-lives in soil (years) at 25°C obtained from P3 and from other treatments (min and max)

Table S13- PCDD/F half-lives in soil at 25°C

	PCDD/F half-lives in soil at 25°C																			
	ONLY PLANT										REDOX CYCLE				COMPOST ADDITION		ADDITIONAL SOIL		THIOSULPHATE ADDITION	
	P1		P3		P4		P7		P9		P2		P5		P6		P8		P10	
PCDD/F congeners	HL	*p*	HL	*p*	HL	*p*	HL	*p*	HL	*p*	HL	*p*	HL	*p*	HL	*p*	HL	*p*	HL	*p*
2,3,7,8-TCDD	9.36	0.378	2.54	0.031	4.46	0.093	nv	-	32.21	0.780	36.55	0.803	5.24	0.131	2.98	0.109	nv	-	nv	-
1,2,3,7,8-PCDD	8.07	0.307	3.89	0.066	15.16	0.580	nv	-	> 40	0.829	nv	-	> 40	0.827	3.71	0.003	nv	-	5.79	0.164
1,2,3,4,7,8-HxCDD	6.26	0.131	3.00	0.004	2.95	0.018	11.11	0.333	24.88	0.668	5.77	0.111	7.63	0.175	1.77	0.003	nv	-	8.08	0.185
1,2,3,6,7,8-HxCDD	24.51	0.681	3.82	0.004	> 40	0.842	9.73	0.316	13.88	0.441	26.34	0.679	4.40	0.009	2.45	0.098	nv	-	10.07	0.293
1,2,3,7,8,9-HxCDD	8.35	0.242	5.55	0.108	nv	-	17.03	0.562	nv	-	nv	-	16.73	0.588	3.63	0.225	14.13	0.619	19.41	0.612
1,2,3,4,6,7,8-HpCDD	7.20	0.004	4.41	0.004	11.91	0.271	8.85	0.009	7.57	0.122	9.02	0.162	5.85	0.057	2.23	0.195	10.44	0.069	22.76	0.556
OCDD	13.22	0.701	3.41	0.101	3.68	0.194	3.34	0.101	4.31	0.262	6.27	0.437	4.24	0.241	4.45	0.771	20.55	0.825	nv	-
2,3,7,8-TCDF	4.31	0.004	5.80	0.031	7.39	0.222	7.00	0.004	9.66	0.339	8.52	0.031	9.94	0.368	7.79	0.468	> 40	0.938	8.12	0.004
1,2,3,7,8-PCDF	5.26	0.004	3.36	0.004	5.39	0.004	11.56	0.322	16.42	0.475	9.76	0.248	5.90	0.087	4.73	0.069	nv	-	12.64	0.364
2,3,4,7,8-PCDF	6.47	0.004	3.99	0.004	5.14	0.004	9.97	0.422	37.83	0.826	8.15	0.339	5.72	0.196	4.73	0.005	nv	-	11.76	0.497
1,2,3,4,7,8-HxCDF	6.20	0.004	4.35	0.004	6.17	0.004	17.18	0.464	14.25	0.401	15.99	0.425	7.85	0.160	3.60	0.029	14.93	0.314	15.70	0.415
1,2,3,6,7,8-HxCDF	5.73	0.004	3.99	0.004	6.98	0.004	10.27	0.009	12.03	0.302	28.01	0.615	8.34	0.166	3.44	0.028	16.80	0.376	29.86	0.639
2,3,4,6,7,8-HxCDF	6.87	0.004	4.27	0.004	6.53	0.004	18.12	0.511	23.49	0.637	16.96	0.484	8.83	0.236	3.67	0.011	21.99	0.476	20.38	0.559
1,2,3,7,8,9-HxCDF	7.09	0.009	4.56	0.004	6.99	0.009	12.45	0.288	nv	-	14.64	0.365	7.29	0.130	3.55	0.023	7.79	0.183	24.74	0.563
1,2,3,4,6,7,8-HpCDF	9.05	0.004	5.41	0.004	10.04	0.009	18.23	0.496	12.99	0.358	15.51	0.425	8.76	0.221	3.25	0.011	16.01	0.284	27.30	0.660
1,2,3,4,7,8,9-HpCDF	11.25	0.322	4.98	0.009	9.49	0.070	24.52	0.643	> 40	0.898	19.65	0.602	8.65	0.254	3.20	0.019	7.95	0.311	> 40	0.986
OCDF	6.98	0.062	2.63	0.004	11.20	0.184	nv	-	10.69	0.200	14.58	0.267	7.50	0.126	4.11	0.094	30.14	0.641	nv	-

NOTE: "nv" means that concentration at T4 was equal or slightly higher of the initial concentration showing no degradation in these conditions; "p" is the p-value

BIODEGRADATION vs. BOUND RESIDUE FORMATION

Table S14 – Comparison (ratio) between PCDD/F concentrations in soil pore water ($C_{pw(1)}$) estimated from soil/water partition coefficient (Kd) and those ($C_{pw(2)}$) estimated from the root concentration factor.

PCDD/Fs	Cs (ng/kg dw)	Cr (ng/kg dw)	Log Kow	Kd (L/kg)	$C_{pw(1)}$ (ng/L) (**)	$C_{pw(2)}$ (ng/L) (***)	Ratio
2,3,7,8-TCDD	1.01	<LOQ	6.8	4.66E+04	2.18E-05	n.a.	n.a.
1,2,3,7,8-PCDD	6.68	<LOQ	7.4 (*)	1.85E+05	3.61E-05	n.a.	n.a.
1,2,3,4,7,8-HxCDD	5.13	<LOQ	7.8 (*)	4.66E+05	1.10E-05	n.a.	n.a.
1,2,3,6,7,8-HxCDD	10.15	10.61	7.8 (*)	4.66E+05	2.18E-05	6.58E-05	3.02
1,2,3,7,8,9-HxCDD	8.58	<LOQ	7.8 (*)	4.66E+05	1.84E-05	n.a.	n.a.
1,2,3,4,6,7,8-HpCDD	77.71	52.47	8	7.38E+05	1.05E-04	2.28E-04	2.17
OCDD	1258.03	198.10	8.2	1.17E+06	1.08E-03	6.05E-04	0.56
2,3,7,8-TCDF	558.70	607.18	6.1	9.29E+03	6.01E-02	7.67E-02	1.28
1,2,3,7,8-PCDF	278.63	209.80	6.5 (*)	2.33E+04	1.19E-02	1.30E-02	1.09
2,3,4,7,8-PCDF	205.71	246.52	6.5	2.33E+04	8.81E-03	1.53E-02	1.74
1,2,3,4,7,8-HxCDF	462.45	379.81	7	7.38E+04	6.27E-03	9.73E-03	1.55
1,2,3,6,7,8-HxCDF	93.93	79.29	7 (*)	7.38E+04	1.27E-03	2.03E-03	1.60
2,3,4,6,7,8-HxCDF	63.12	58.96	7 (*)	7.38E+04	8.55E-04	1.51E-03	1.77
1,2,3,7,8,9-HxCDF	119.58	79.43	7 (*)	7.38E+04	1.62E-03	2.04E-03	1.26
1,2,3,4,6,7,8-HpCDF	252.07	147.82	7.4	1.85E+05	1.36E-03	1.86E-03	1.37
1,2,3,4,7,8,9-HpCDF	139.00	60.78	7.4 (*)	1.85E+05	7.50E-04	7.66E-04	1.02
OCDF	977.60	387.34	8	7.38E+05	1.32E-03	1.69E-03	1.27

NOTE: Cs is the concentration in soil, Cr is the concentration in roots, Log Kow is the octanol-water partition coefficient from [1](*) due to a lack of data the values refer to congeners with the same number of chlorines; (**) calculated from Kd and soil concentrations; (***) calculated from root concentrations and root concentration factor (RCF) obtained from [5]; n.a. means not available.

Table S15 - Natural attenuation half-life for PCDD/F in soil from laboratory and field experiments with spiked and aged soil

Natural attenuation HL in soil (years)											
References	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
Experiment type	**Microcosm**	**Soil column**	**Microcosm**	**Microcosm**	**Microcosm**	**Selected values**	**Field**	**Field**	**Field**	**Field**	**Field**
Contamination type	**Spiked**	**Spiked**	**Spiked**	**Spiked**	**Aged**		**Aged**	**Aged**	**Aged**	**Aged**	**Aged**
Experiment time	**1 y**	**1 y**	**1.2 y**	**0.3 y**	**0.2 y**		**2 y**	**20 y**	**20 y**	**43 y**	**40 y**
Temperature	**28-30°C**	**20-35 °C**	**30°C**	**20°C**	**28°C**	**25°C**	**nr**	**nr**	**25°C**	**nr**	**nr**
2,3,7,8-TCDD	1.4	>1				1-3	>2	23	30		5
1,2,3,7,8-PCDD						1-3	>2	21	33		17
1,2,3,4,7,8-HxCDD			2.9			3-11	>2	22	79		14
1,2,3,6,7,8-HxCDD						3-11	>2	21	18		15
1,2,3,7,8,9-HxCDD						3-11	>2	22	23		11
1,2,3,4,6,7,8-HpCDD			2.9			3-11	>2	21	30		13
OCDD				1.7		3-11	>2	20	43	14	12
2,3,7,8-TCDF						1-3	>2	27	18		25
1,2,3,7,8-PCDF						1-3	>2	36	15		12
2,3,4,7,8-PCDF						1-3	>2	24	18		15
1,2,3,4,7,8-HxCDF						1-3	>2	29	20		21
1,2,3,6,7,8-HxCDF						1-3	>2	38	23		11
2,3,4,6,7,8-HxCDF						1-3	>2	41	15		21
1,2,3,7,8,9-HxCDF						1-3	>2	18	16		
1,2,3,4,6,7,8-HpCDF			2.5		0.03	1-3	>2		11		10
1,2,3,4,7,8,9-HpCDF					0.07	1-3	>2	19	10		7
OCDF					0.02	3-11	>2	22	8		11

A. Ref. [6] (calculated from concentrations and first order kinetics)
B. Ref. [7]
C. Ref. [8]
D. Ref. [9] (calculated from concentrations and first order kinetics)
E. Ref. [10] (calculated from concentration reduction and first order kinetics)
F. Ref. [1]
G. Ref. [11]
H. Ref. [12] (calculated from concentrations and first order kinetics)
I. Ref.[13] (converted to 25°C, sediments)
J. Ref. [14] (model)
K. Ref. [15]

Table S16 - Bioaugmentation half-life for PCDD/F in soil from laboratory experiments (continues in the next page)

HL from bioaugmentation experiments (years)					
Reference	**A**	**B**	**C**	**D**	**E**
Experiment type	**Microcosm**	**Microcosm**	**Microcosm**	**Microcosm**	**Microcosm**
Matrices	**Medium**	**Medium with contaminated soil**	**Slurry with contaminated soil**	**Slurry with contaminated soil**	**Contaminated soil**
Microorganism	**White Rot Fungus**	**Bacteria**	**White Rot Fungus**	**Bacteria**	**White Rot Fungus**
Species	***Phanerochaete sordida* YK-624**	***Pseudomonas sp*. strain CA10**	***Stropharia rugosoannulata***	***Pseudomonas mendocina* NSYSU**	***Stropharia rugosoannulata***
Contamination type	**Spiked**	**Aged**	**Aged**	**Aged**	**Aged**
Experiment time	**14 days**	**7 days**	**105 days**	**65 days**	**90 days**
Temperature	**30°C**	**30°C**	**nr**	**20°C**	**room temperature**
2,3,7,8-TCDD	0.09	0.07			
1,2,3,7,8-PCDD	0.09	0.16	0.26		
1,2,3,4,7,8-HxCDD	0.05	0.18	0.48		
1,2,3,6,7,8-HxCDD		0.12	0.26		0.23
1,2,3,7,8,9-HxCDD		0.17	0.33		0.27
1,2,3,4,6,7,8-HpCDD	0.06	0.14	0.29		0.28
OCDD	0.17	0.30	0.28	0.11	0.37
2,3,7,8-TCDF	0.05	0.11	0.09		3.33
1,2,3,7,8-PCDF	0.10	0.11	0.25		0.38
2,3,4,7,8-PCDF		0.13			0.17
1,2,3,4,7,8-HxCDF	0.04	0.33	0.42		0.18
1,2,3,6,7,8-HxCDF		0.13	0.58		0.12
2,3,4,6,7,8-HxCDF		0.41	0.42		0.18
1,2,3,7,8,9-HxCDF			0.15		
1,2,3,4,6,7,8-HpCDF	0.05		1.32		0.16
1,2,3,4,7,8,9-HpCDF		0.18	0.22		0.27
OCDF	0.06	3.32	0.69		0.16
SUM					

A. Ref. [16] (calculated from concentration reduction and first order kinetics)
B. Ref. [17] (calculated from concentration reduction and first order kinetics)
C. Ref. [18] (calculated from concentration reduction and first order kinetics)
D. Ref. [19] (calculated from concentration reduction and first order kinetics)
E. Ref. [20] (calculated from concentration reduction and first order kinetics)

Table S16 - Bioaugmentation half-life for PCDD/F in soil from laboratory experiments (continued)

HL from bioaugmentation experiments (years)					
Reference	**F**	**G**	**H**	**I**	**J**
Experiment type	**Microcosm**	**Microcosm**	**Microcosm**	**Composting reactor**	**Hypoxic reactor**
Matrices	**Contaminated soil**	**Medium with contaminated soil**	**Medium**	**Contaminated soil**	**Contaminated soil**
Microorganism	**From compost (waste sludge)**	**Bacteria**	**White Rot Fungus**	**From compost (food waste)**	**From compost (cow dung)**
Species	**Different species**	***Pseudomonas mendocina* NSYSU**	***Rigidoporus* sp.**	**Different species**	**Different species**
Contamination type	**Aged**	**Aged**	**Spiked**	**Aged**	**Aged**
Experiment time	**30 days**	**64 days**	**28 days**	**42 days**	**14-128 days**
Temperature	**room temperature**	**20 °C (anaerobic)**	**nr**	**30 - > 70°C**	25-28°C
2,3,7,8-TCDD			0.05		
1,2,3,7,8-PCDD					
1,2,3,4,7,8-HxCDD					
1,2,3,6,7,8-HxCDD	0.04				
1,2,3,7,8,9-HxCDD	0.16				
1,2,3,4,6,7,8-HpCDD	0.06				
OCDD	0.07				0.08 - 0.47
2,3,7,8-TCDF					
1,2,3,7,8-PCDF					
2,3,4,7,8-PCDF					
1,2,3,4,7,8-HxCDF	0.10				
1,2,3,6,7,8-HxCDF	0.54				
2,3,4,6,7,8-HxCDF	0.10				
1,2,3,7,8,9-HxCDF					
1,2,3,4,6,7,8-HpCDF					
1,2,3,4,7,8,9-HpCDF	0.08				
OCDF	0.05	0.14			0.06-0.31
SUM				0.07	

F. Ref. [21] (calculated from concentration reduction and first order kinetics)
G. Ref. [22] (calculated from concentration reduction and first order kinetics)
H. Ref. [23] (calculated from concentration reduction and first order kinetics)
I. Ref. [24] (calculated from degradation rate)
J. Ref. [25] (calculated from degradation rate)

Table S17 - Rhizoremediation half-life for selected PCDD/F in soil

HL from rhizoremediation experiment (years)		
Reference	**A**	**B**
Experiment type	Pot	Pot
Plant species	*Cynodon dactylon, Agrostis palustris* Huds.*, Zoysia japonica, Trifolium repens* L.	*Trifolium repens* L.
Contamination type	Spiked soil	Spiked soil
Experiment time	60 days	84 days
Temperature	26°C	26°C
DD (dibenzo-p-dioxin)		0.61
1-CDD (1-chlorodibenzo-p-dioxin)		0.71
2,7-DCDD (2,7-dichlorodibenzo-p-dioxin)		ns
1,2,4-TCDD (1,2,4-trichlorodibenzo-p-dioxin)		ns
1,2,3,4-TCDD (1,2,3,4-tetrachlorodibenzo-p-dioxin)		ns
DF (dibenzofuran)	0.1-0.3	0.33
2,8-DCDF (2,8-Dichlorodibenzofuran)		ns
2,4,8-TCDF (2,4,8-Trichlorodibenzofuran)		ns

A. Ref. [26] (calculated from concentration reduction and first order kinetics)
B. Ref. [27] (calculated from concentration reduction and first order kinetics)
ns. Concentration reduction not statistically significant with respect to control

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