

Appendix

Title: The molecular composition of extractable soil microbial compounds varies with soil depth and tree species

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Table S1

Information about the sample preparation for the CFE method and the following solid phase extraction (SPE). Depending on the density of soil samples 3.125 to 25 g (dry weight) of moist sampling material was fumigated in a desiccator with chloroform for 24 h followed by repeated evacuation. 100 mL of a 0.01 M CaCl_2 solution were used to extract the organic matter from fumigated and non-fumigated control soil samples. The procedure was repeated multiple times and the extracts were pooled to gain higher volumes of soil extracts for further analyses. For the ESI-FT-ICR-MS analysis, an aliquot with soil horizon specific volumes of the fumigated and non-fumigated CaCl_2 extracts were simultaneously desalted and concentrated by SPE (CHROMABOND C18ec, Macherey & Nagel, Düren, Germany).

		Weight of sample material		Extracted volume (SPE)	
		fumigated	non-fumigated	fumigated	non-fumigated
		[g]	[g]	[mL]	[mL]
Beech	OL	3.125	3.125	250	250
	OF	12.5	12.5	250	250
	OH	12.5	12.5	250	250
	0-5 cm	25.0	25.0	500	500
	5-10 cm	25.0	25.0	700	700
	10-30 cm	25.0	25.0	700	700
Douglas fir	OL	3.125	3.125	250	250
	OF	6.25	6.25	250	250
	OH	12.5	12.5	250	250
	0-5 cm	25.0	25.0	500	500
	5-10 cm	25.0	25.0	700	700
	10-30 cm	25.0	25.0	700	700
Pine	OL	6.25	6.25	250	250
	OF	6.25	6.25	250	250
	OH	12.5	12.5	250	250
	0-5 cm	25.0	25.0	500	500
	5-10 cm	25.0	25.0	700	700
	10-30 cm	25.0	25.0	700	700

Table S2

Total number of peaks and their relative shares (as percentage) assigned to CHO, CHON, CHOP and CHOS compounds obtained from ESI-FT-ICR-MS spectra of extracts from fumigated and non-fumigated soil samples taken from the depth gradient (OL horizon to 10-30 cm) in beech, Douglas fir and pine stands.

		Beech				Douglas fir				Pine			
		fumigated		non-fumigated		fumigated		non-fumigated		fumigated		non-fumigated	
		Peaks	[%]	Peaks	[%]	Peaks	[%]	Peaks	[%]	Peaks	[%]	Peaks	[%]
CHO	OL	2653	64.2	3486	61.2	3033	64.0	2740	64.4	2698	67.5	2803	70.8
	OF	3416	61.0	3088	63.9	2920	62.0	2949	59.7	2958	67.7	3383	65.1
	OH	2795	55.0	3108	62.9	2547	57.3	2770	57.4	3123	62.4	4235	54.6
	0-5 cm	2586	56.7	2957	57.9	3950	57.2	1442	41.9	3192	57.0	2930	60.2
	5-10 cm	2458	58.5	2919	65.5	3660	55.4	3434	63.1	3015	65.7	1665	76.8
	10-30 cm	2567	63.0	3125	60.6	2808	63.8	2798	61.0	3149	61.2	2810	67.0
CHON	OL	755	18.3	1131	19.9	878	18.5	710	16.7	787	19.7	748	18.9
	OF	1365	24.4	871	18.0	1016	21.6	1110	22.5	957	21.9	1044	20.1
	OH	1104	21.7	931	18.8	1319	29.7	1326	27.5	1104	22.1	1699	21.9
	0-5 cm	1243	27.2	1503	29.4	1541	22.3	1208	35.1	1342	24.0	1104	22.7
	5-10 cm	1292	30.7	1000	22.4	1590	24.1	1187	21.8	910	19.8	338	15.6
	10-30 cm	1190	29.2	1333	25.8	1047	23.8	1257	27.4	1317	25.6	869	20.7
CHOP	OL	264	6.4	181	3.2	134	2.8	134	3.1	203	5.1	166	4.2
	OF	142	2.5	168	3.5	124	2.6	104	2.1	124	2.8	143	2.8
	OH	149	2.9	161	3.3	189	4.3	143	3.0	129	2.6	135	1.7
	0-5 cm	164	3.6	120	2.3	123	1.8	116	3.4	270	4.8	118	2.4
	5-10 cm	112	2.7	112	2.5	138	2.1	109	2.0	162	3.5	118	5.4
	10-30 cm	111	2.7	193	3.7	126	2.9	106	2.3	142	2.8	124	3.0
CHOS	OL	462	11.2	898	15.8	693	14.6	672	15.8	308	7.7	240	6.1
	OF	673	12.0	702	14.5	650	13.8	773	15.7	329	7.5	626	12.0
	OH	1036	20.4	740	15.0	388	8.7	585	12.1	648	12.9	1693	21.8
	0-5 cm	570	12.5	530	10.4	1296	18.8	673	19.6	798	14.2	716	14.7
	5-10 cm	340	8.1	427	9.6	1222	18.5	711	13.1	504	11.0	46	2.1
	10-30 cm	204	5.0	508	9.8	420	9.5	429	9.3	539	10.5	390	9.3

Table S3

Total intensity of peaks and their relative shares (as percentage) assigned to CHO, CHON, CHOP and CHOS compounds obtained from ESI-FT-ICR-MS spectra of extracts from fumigated and non-fumigated soil samples taken from the depth gradient (OL horizon to 10-30 cm) in beech, Douglas fir and pine stands.

		Beech				Douglas fir				Pine			
		fumigated		non-fumigated		fumigated		non-fumigated		fumigated		non-fumigated	
		intensity	[%]	intensity	[%]	intensity	[%]	intensity	[%]	intensity	[%]	intensity	[%]
CHO	OL	18779242	82.2	16972434	80.6	357915	19.9	23111341	86.1	2484690	86.7	9867999	85.1
	OF	16279208	79.2	17058811	84.9	290995	27.0	17938971	80.9	11449576	81.7	8382571	83.2
	OH	12119381	65.9	7973181	80.3	13338981	63.2	18745415	67.0	11327198	80.5	15448313	81.1
	0-5 cm	11295053	74.3	10210357	77.0	27381407	81.7	9645196	68.9	748051	42.0	4605544	77.2
	5-10 cm	6675591	68.4	7110633	72.0	21507883	79.1	21780904	81.3	4656430	73.2	955363	75.8
	10-30 cm	2962759	71.9	6365674	71.9	900342	45.0	11575322	72.3	16156161	72.4	7883992	74.8
CHON	OL	2770088	12.1	2883760	13.7	947970	52.7	2140969	8.0	298699	10.4	1436118	12.4
	OF	3355101	16.3	2040730	10.2	27623	2.6	2940024	13.3	2285376	16.3	1375430	13.6
	OH	3777601	20.5	1310204	13.2	7186254	34.0	8128752	29.1	2261755	16.1	2274881	11.9
	0-5 cm	3015984	19.8	2760745	20.8	4236108	12.6	3312078	23.7	470610	26.4	1092329	18.3
	5-10 cm	2778187	28.5	2423685	24.5	3964994	14.6	3770333	14.1	1388325	21.8	266959	21.2
	10-30 cm	1048464	25.4	2147536	24.3	673808	33.7	3840327	24.0	5474603	24.5	2294001	21.8
CHOP	OL	118529	0.5	93496	0.4	32697	1.8	189204	0.7	20481	0.7	37748	0.3
	OF	40985	0.2	29898	0.1	34534	3.2	33661	0.2	16479	0.1	26675	0.3
	OH	38087	0.2	49075	0.5	41658	0.2	36642	0.1	20324	0.1	14036	0.1
	0-5 cm	49770	0.3	22086	0.2	46777	0.1	43464	0.3	37441	2.1	10805	0.2
	5-10 cm	14468	0.1	15966	0.2	57752	0.2	41438	0.2	10803	0.2	3231	0.3
	10-30 cm	8069	0.2	71131	0.8	30331	1.5	26114	0.2	37305	0.2	16355	0.2
CHOS	OL	1181119	5.2	1108906	5.3	460984	25.6	1389139	5.2	62517	2.2	259289	2.2
	OF	889011	4.3	973843	4.8	723148	67.2	1270157	5.7	270283	1.9	296187	2.9
	OH	2449128	13.3	593738	6.0	549505	2.6	1066885	3.8	468640	3.3	1307323	6.9
	0-5 cm	842635	5.5	267700	2.0	1851653	5.5	1000786	7.1	525027	29.5	255193	4.3
	5-10 cm	291197	3.0	324190	3.3	1667998	6.1	1198555	4.5	305598	4.8	34402	2.7
	10-30 cm	102086	2.5	267800	3.0	394138	19.7	571605	3.6	633882	2.8	343637	3.3

Table S4

Total intensity of peaks and their relative shares (as percentage) that were assigned to major groups of biomolecules (according to Sleighter and Hatcher, 2007) obtained from ESI-FT-ICR-MS spectra of extracts from fumigated and non-fumigated soil samples taken from the depth gradient (OL horizon to 10-30 cm) in beech, Douglas fir and pine stands. Formulae that were only present in fumigated extracts were considered and identified as microbial-derived (SMB), while formulae only in non-fumigated were considered as bulk SOM-related.

Biomolecular groups		Easily extractable SOM						Soil microbial biomass					
		Beech		Douglas fir		Pine		Beech		Douglas fir		Pine	
		Intensity	(%)	Intensity	(%)	Intensity	(%)	Intensity	(%)	Intensity	(%)	Intensity	(%)
Lipid-like	L	7735	1	15968	1	881	0	22032	3	2644	0	332	1
	OF	12746	1	3572	1	4757	1	19661	2	3010	0	489	0
	OH	7977	1	5300	1	2076	0	5706	1	7501	1	5876	1
	0-5 cm	3417	1	1700	0	881	1	75895	14	5952	1	1085	0
	5-10 cm	5225	1	9824	1	995	4	1500	0	116129	14	1748	0
	10-30 cm	6357	2	3034	0	127815	26	59075	28	2900	1	1309	0
Protein-like	L	158992	22	109406	7	88581	29	392348	49	283069	39	32827	63
	OF	145302	16	71514	12	17786	5	217898	21	81249	9	90440	42
	OH	181180	30	73920	7	12813	1	149050	35	165999	19	146806	30
	0-5 cm	92932	17	64692	2	5226	4	156487	29	132588	16	106387	14
	5-10 cm	111504	24	187658	14	3310	13	44698	11	100141	12	108237	17
	10-30 cm	60200	20	187066	16	49808	10	34653	17	77083	17	79231	21
Aminosugar-like	L	6208	1	18083	1	6347	2	18285	2	5885	1	867	2
	OF	11013	1	8297	1	5051	2	10525	1	16727	2	10321	5
	OH	3857	1	23132	2	5696	0	9867	2	16903	2	5329	1
	0-5 cm	7756	1	14891	1	6478	5	3451	1	19605	2	6955	1
	5-10 cm	8440	2	16841	1	1438	6	9599	2	9042	1	1421	0
	10-30 cm	6887	2	1352	0	4383	1	2132	1	11329	2	10301	3

Cellulose-like	L	22390	3	170668	10	11384	4	39215	5	42664	6	1372	3
	OF	36611	4	38994	6	11942	4	37886	4	33851	4	7878	4
	OH	122277	20	53427	5	31749	3	25095	6	41404	5	16184	3
	0-5 cm	22606	4	66742	2	12145	9	22215	4	98795	12	29177	4
	5-10 cm	26159	6	74910	5	4729	18	19203	5	44285	5	16166	3
	10-30 cm	14223	5	28649	2	10503	2	9965	5	23322	5	27881	7
Lignin-like	L	499959	70	1311011	78	195934	64	316215	39	378427	52	15572	30
	OF	697980	76	459577	75	275025	84	608674	60	742736	83	96396	44
	OH	279191	46	845825	81	852573	72	235655	55	602516	70	305783	63
	0-5 cm	419754	76	2196196	77	106272	78	275652	51	490950	59	617320	79
	5-10 cm	294319	64	1033104	75	13833	54	320223	79	534445	63	494950	78
	10-30 cm	199470	67	933031	80	295164	59	99548	48	331303	71	233367	61
Tannin-like	L	5097	1	42154	3	3499	1	5345	1	3833	1	254	0
	OF	1848	0	6104	1	4530	1	91902	9	5614	1	6335	3
	OH	865	0	15968	2	216986	18	345	0	7988	1	836	0
	0-5 cm	1932	0	16092	1	709	1	911	0	42502	5	4336	1
	5-10 cm	5147	1	15181	1	324	1	1463	0	8267	1	2066	0
	10-30 cm	1773	1	3194	0	2237	0	444	0	5639	1	8167	2
Condensed-hydrocarbon-like	L	15504	2	9086	1	1861	1	13980	2	8299	1	861	2
	OF	9298	1	24653	4	8992	3	32351	3	13973	2	5282	2
	OH	5527	1	26429	3	65682	6	6003	1	13956	2	3521	1
	0-5 cm	4646	1	474834	17	3695	3	3205	1	47921	6	14343	2
	5-10 cm	12422	3	31957	2	1069	4	6398	2	42503	5	6647	1
	10-30 cm	8124	3	10905	1	8413	2	2437	1	13838	3	21295	6

Table S5

Weighted averages of different structural and energetic indices for the molecular composition of SMB and SOM-derived compounds obtained from formulae that were only present in extracts of fumigated (SMB) and non-fumigated (SOM) soil samples taken from the depth gradient (OL horizon to 10-30 cm) in beech, Douglas fir and pine stands. AI = aromaticity index, DBE = double-bond equivalent, DBE/C = double-bond equivalents to carbon ratio, NOSC = nominal oxidation state of carbon, ΔG^0_{Cox} = Gibbs energy for the oxidative half reaction.

		Beech		Douglas fir		Pine	
		SMB	SOM	SMB	SOM	SMB	SOM
AI	OL	0.08	0.10	0.15	0.20	0.12	0.16
	OF	0.09	0.11	0.22	0.25	0.22	0.25
	OH	0.08	0.12	0.23	0.23	0.19	0.27
	0-5 cm	0.08	0.09	0.27	0.26	0.22	0.26
	5-10 cm	0.11	0.11	0.30	0.25	0.14	0.26
	10-30 cm	0.09	0.11	0.26	0.16	0.23	0.18
DBE/C	OL	0.29	0.32	0.34	0.36	0.27	0.34
	OF	0.37	0.36	0.36	0.39	0.36	0.39
	OH	0.33	0.35	0.37	0.40	0.35	0.48
	0-5 cm	0.34	0.36	0.42	0.38	0.37	0.41
	5-10 cm	0.34	0.36	0.39	0.38	0.32	0.38
	10-30 cm	0.33	0.34	0.39	0.34	0.38	0.34
DBE	OL	9.64	10.33	12.36	13.42	9.96	12.62
	OF	11.20	12.46	13.07	14.04	13.00	14.17
	OH	10.27	10.87	12.82	14.61	12.68	15.68
	0-5 cm	9.53	10.52	14.95	14.29	12.98	15.01
	5-10 cm	10.38	10.77	13.79	13.63	11.16	13.03
	10-30 cm	10.04	10.22	13.79	12.31	13.02	12.23
NOSC	OL	-0.87	-0.79	-0.64	-0.62	-0.79	-0.73
	OF	-0.61	-0.65	-0.56	-0.56	-0.59	-0.53
	OH	-0.76	-0.71	-0.56	-0.51	-0.63	-0.24
	0-5 cm	-0.74	-0.66	-0.44	-0.52	-0.52	-0.50
	5-10 cm	-0.66	-0.62	-0.53	-0.55	-0.75	-0.58
	10-30 cm	-0.73	-0.66	-0.56	-0.65	-0.57	-0.69
Gibbs energy ΔG^0_{Cox} [kJ (mol C) ⁻¹]	OL	85.2	82.7	78.4	78.1	82.8	81.1
	OF	77.6	79.0	76.2	76.1	77.2	75.3
	OH	82.0	80.5	76.2	74.8	78.2	67.3
	0-5 cm	81.3	79.2	72.9	75.2	75.2	74.7
	5-10 cm	79.2	78.0	75.4	76.1	81.8	76.7
	10-30 cm	81.0	79.2	76.2	78.9	76.6	79.9

Table S6

Weighted averages of the molecular formulae of SMB and SOM derived compounds obtained from formulae that were only present in extracts of fumigated (SMB) and non-fumigated (SOM) soil samples taken from the depth gradient (OL horizon to 10-30 cm) in beech, Douglas fir and pine stands.

		Beech	Douglas fir	Pine
SMB	OL	C _{33.41} H _{51.18} O _{9.26} N _{0.65} S _{0.46}	C _{35.25} H _{49.75} O _{10.99} N _{0.98} S _{0.78}	C _{35.86} H _{55.86} O _{11.02} N _{1.08} S _{0.73}
	OF	C _{30.42} H _{41.87} O _{10.38} N _{0.43} S _{0.37}	C _{33.21} H _{47.03} O _{11.26} N _{0.86} S _{0.73}	C _{35.48} H _{49.25} O _{10.68} N _{1.30} S _{0.88}
	OH	C _{31.19} H _{45.39} O _{9.30} N _{0.56} S _{0.41}	C _{33.88} H _{46.13} O _{10.86} N _{1.00} S _{0.75}	C _{34.98} H _{48.63} O _{10.70} N _{1.01} S _{0.76}
	0-5 cm	C _{28.59} H _{41.57} O _{8.86} N _{0.47} S _{0.37}	C _{34.94} H _{44.31} O _{10.96} N _{1.33} S _{0.87}	C _{34.38} H _{46.61} O _{11.76} N _{0.83} S _{0.72}
	5-10 cm	C _{29.77} H _{42.24} O _{9.82} N _{0.46} S _{0.54}	C _{35.02} H _{46.53} O _{10.68} N _{1.07} S _{0.79}	C _{35.36} H _{52.31} O _{9.86} N _{0.92} S _{0.91}
	10-30 cm	C _{30.32} H _{43.99} O _{9.61} N _{0.42} S _{0.46}	C _{35.41} H _{47.40} O _{10.57} N _{1.17} S _{0.93}	C _{34.17} H _{46.49} O _{10.31} N _{1.19} S _{0.92}
	mean	C_{30.61}H_{44.37}O_{9.54}N_{0.50}S_{0.44}	C_{34.62}H_{46.86}O_{10.89}N_{1.07}S_{0.81}	C_{35.04}H_{49.86}O_{10.72}N_{1.06}S_{0.82}
SOM	OL	C _{32.65} H _{48.20} O _{9.59} N _{0.57} S _{0.39}	C _{35.96} H _{49.67} O _{10.48} N _{1.11} S _{0.74}	C _{36.69} H _{52.64} O _{9.28} N _{1.52} S _{0.81}
	OF	C _{34.13} H _{46.85} O _{10.81} N _{0.52} S _{0.38}	C _{35.64} H _{47.42} O _{10.52} N _{1.21} S _{0.84}	C _{35.98} H _{47.59} O _{11.43} N _{0.97} S _{0.76}
	OH	C _{30.93} H _{43.55} O _{9.57} N _{0.44} S _{0.34}	C _{35.93} H _{46.74} O _{11.11} N _{1.11} S _{0.83}	C _{33.20} H _{38.93} O _{12.28} N _{0.91} S _{0.66}
	0-5 cm	C _{28.80} H _{39.99} O _{9.40} N _{0.42} S _{0.39}	C _{36.94} H _{49.16} O _{12.41} N _{0.87} S _{0.75}	C _{36.31} H _{47.00} O _{10.76} N _{1.39} S _{0.92}
	5-10 cm	C _{29.26} H _{40.42} O _{10.04} N _{0.44} S _{0.44}	C _{35.87} H _{48.49} O _{11.44} N _{1.00} S _{0.74}	C _{33.98} H _{46.17} O _{9.79} N _{1.28} S _{0.94}
	10-30 cm	C _{28.72} H _{40.42} O _{9.68} N _{0.41} S _{0.44}	C _{35.70} H _{50.66} O _{11.22} N _{0.88} S _{0.67}	C _{35.31} H _{50.02} O _{10.50} N _{0.86} S _{0.77}
	mean	C_{30.75}H_{43.24}O_{9.68}N_{0.47}S_{0.40}	C_{36.01}H_{48.69}O_{11.20}N_{1.03}S_{0.76}	C_{35.24}H_{47.06}O_{10.67}N_{1.16}S_{0.81}

Table S7

Total contents of different sugar types in the SMB calculated from the sugar contents of non-fumigated and fumigated soil samples. Ar = arabinose, Ri = ribose, Ma+Xy = mannose + xylose, Fr = fructose, Fu = fucose, Ga = galactose, Gl = glucose, Rh = rhamnose, Pen = pentose (calculated as follows: $\text{Pen} = \text{Ar} + \text{Ri} + (\text{Ma} + \text{Xy})/2$), Hex = hexose (calculated as follows: $\text{Hex} = \text{Fr} + \text{Fu} + \text{Ga} + \text{Gl} + \text{Rh} + (\text{Ma} + \text{Xy})/2$), Hex/Pen = hexose to pentose ratio. It must be noted, that mannose and xylose eluted together in the HPAEC-PAD analysis. Additionally, the relative percentage of sugar carbon from microbial biomass carbon (MBC) was calculated.

		Total sugars	Ar	Ri	Ma+Xy	Fr	Fu	Ga	Gl	Rh	Pen	Hex	Hex/Pen	rel. sugars of MBC
		[µg C g ⁻¹ soil]												[%]
SMB	Beech													
	OL	449.0	6.3	32.3	33.2	10.1	4.2	37.4	322.5	3.1	55.2	393.9	7.1	7.3
	OF	172.9	6.0	7.4	20.0	3.3	2.6	13.6	118.5	1.3	23.4	149.4	6.4	7.4
	OH	73.9	2.7	1.7	4.6	1.9	1.5	0.0	61.4	0.2	6.7	67.2	10.0	9.0
	0-5 cm	21.2	0.5	0.3	1.7	0.4	0.3	0.0	18.1	0.0	1.6	19.6	12.2	21.8
	5-10 cm	8.4	0.2	0.1	0.5	0.0	0.2	0.0	7.4	0.0	0.6	7.9	13.5	12.9
	10-30 cm	5.8	0.1	0.1	0.0	0.1	0.1	0.0	5.3	0.0	0.2	5.6	30.8	14.3
	Douglas fir													
	OL	167.9	16.0	35.2	51.9	0.0	7.0	27.5	7.9	22.4	77.1	90.8	1.2	3.5
	OF	295.0	13.2	14.8	29.7	5.9	6.8	23.4	197.0	4.3	42.8	252.2	5.9	5.7
	OH	115.6	2.8	1.8	5.5	1.4	0.9	0.0	102.3	0.8	7.4	108.2	14.7	8.8
	0-5 cm	35.8	0.5	0.4	0.8	0.5	0.2	0.0	33.3	0.2	1.3	34.5	27.0	17.9
	5-10 cm	12.2	0.1	0.1	0.0	0.1	0.1	0.0	11.8	0.0	0.2	12.0	71.5	21.6
	10-30 cm	6.0	0.1	0.0	0.0	0.1	0.1	0.0	5.7	0.0	0.1	5.9	49.5	11.9
	Pine													
	OL	722.6	9.0	13.8	36.7	138.1	0.4	54.2	466.0	4.3	41.2	681.4	16.5	7.1
	OF	635.5	22.4	13.5	55.4	19.7	3.2	55.4	461.3	4.5	63.7	571.9	9.0	14.2
	OH	169.9	5.4	1.8	12.4	2.6	1.1	0.0	145.8	0.8	13.5	156.5	11.6	16.5
	0-5 cm	41.6	1.0	0.4	0.0	0.0	0.2	0.0	39.8	0.2	1.4	40.2	29.2	19.4
	5-10 cm	20.5	0.1	0.1	0.8	1.8	0.1	0.0	17.5	0.0	0.6	19.9	32.9	49.1
	10-30 cm	14.6	0.1	0.1	1.2	0.2	0.1	0.0	12.9	0.0	0.8	13.8	17.5	56.1

to be continued

		Total sugars	Ar	Ri	Ma+Xy	Fr	Fu	Ga	Gl	Rh	Pen	Hex	Hex/Pen	rel. sugars of MBC
		[µg C g ⁻¹ soil]												[%]
non- fumigated	Beech													
	OL	8.0	1.3	0.0	1.3	0.0	1.5	0.6	3.1	0.3	1.9	6.1	3.1	-
	OF	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	-
	OH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
	0-5 cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
	5-10 cm	1.3	0.0	0.0	0.3	0.8	0.0	0.0	0.1	0.0	0.2	1.1	6.6	-
	10-30 cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	-
	Douglas fir													
	OL	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.4	0.0	0.1	0.5	5.2	-
	OF	2.0	0.5	0.0	0.6	0.0	0.0	0.0	0.9	0.0	0.8	1.1	1.4	-
	OH	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	1.1	-
	0-5 cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	-
	5-10 cm	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	6.9	-
	10-30 cm	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	7.5	-
	Pine													
	OL	16.1	2.2	0.7	5.2	0.6	0.8	0.7	3.9	2.0	5.5	10.6	1.9	-
	OF	1.5	0.2	0.0	0.9	0.0	0.0	0.0	0.5	0.0	0.6	0.9	1.4	-
	OH	0.4	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2	0.2	1.4	-
	0-5 cm	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	-	-
	5-10 cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
	10-30 cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	-

to be continued

		Total sugars	Ar	Ri	Ma+Xy	Fr	Fu	Ga	Gl	Rh	Pen	Hex	Hex/Pen	rel. sugars of MBC
		[µg C g ⁻¹ soil]												[%]
fumigated	Beech													
	OL	457.1	7.6	32.3	34.5	10.1	5.6	38.0	325.5	3.4	57.1	399.9	7.0	-
	OF	172.9	6.0	7.4	20.0	3.3	2.6	13.6	118.6	1.3	23.5	149.5	6.4	-
	OH	74.0	2.7	1.7	4.6	1.9	1.5	0.0	61.4	0.2	6.7	67.2	10.0	-
	0-5 cm	21.3	0.5	0.3	1.7	0.4	0.3	0.0	18.2	0.0	1.6	19.6	12.2	-
	5-10 cm	9.1	0.2	0.1	0.8	0.3	0.2	0.0	7.5	0.0	0.8	8.4	11.1	-
	10-30 cm	5.8	0.1	0.1	0.0	0.1	0.1	0.0	5.3	0.0	0.2	5.6	29.0	-
	Douglas fir													
	OL	168.4	16.0	35.2	52.1	0.0	7.0	27.5	8.3	22.4	77.2	91.3	1.2	-
	OF	297.0	13.7	14.8	30.2	5.9	6.8	23.4	197.8	4.3	43.6	253.4	5.8	-
	OH	115.9	2.9	1.8	5.6	1.4	0.9	0.0	102.4	0.8	7.5	108.4	14.5	-
	0-5 cm	35.9	0.6	0.4	0.8	0.5	0.2	0.0	33.3	0.2	1.3	34.6	26.6	-
	5-10 cm	12.3	0.1	0.1	0.0	0.2	0.1	0.0	11.8	0.0	0.2	12.1	72.3	-
	10-30 cm	6.0	0.1	0.0	0.0	0.1	0.1	0.0	5.7	0.0	0.1	5.9	50.0	-
	Pine													
	OL	738.7	11.2	14.6	41.9	138.7	1.3	54.9	469.9	6.2	46.7	692.0	14.8	-
	OF	637.1	22.6	13.5	56.3	19.7	3.2	55.4	461.7	4.5	64.3	572.8	8.9	-
	OH	170.3	5.5	1.8	12.6	2.6	1.1	0.0	145.9	0.8	13.6	156.7	11.5	-
	0-5 cm	41.7	1.0	0.4	0.0	0.0	0.2	0.0	39.9	0.2	1.4	40.3	29.3	-
	5-10 cm	20.5	0.1	0.1	0.8	1.8	0.1	0.0	17.5	0.0	0.6	19.9	32.9	-
	10-30 cm	14.6	0.1	0.1	1.2	0.2	0.1	0.0	12.9	0.0	0.8	13.8	17.2	-

Fig. S1

Correlogram, depicting relationships between SMB-derived (y-axis) and SOM-derived (x-axis) parameters. Only significant relationships ($p < 0.05$) based on Spearman's rank order correlation are shown.

