

Tab. 1a –Supplemental: Distribution of PLFA (mol%) in control soil and litter treated soil samples (8 weeks, 12 weeks) based on means (n=5) ± standard deviation (SD), summarized according to their chemical structure.

PLFA ± SD	control				8 weeks				12 weeks			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
iso	0.63	9.63	9.38	11.84	3.27	5.90	6.04	7.69	4.12	5.33	8.05	8.51
±	0.14	3.47	3.33	1.79	1.32	1.92	1.25	0.93	1.11	0.52	2.65	0.83
ant	1.14	6.42	6.79	6.18	3.53	4.75	5.13	5.90	4.55	5.19	6.93	5.41
±	0.38	2.69	1.95	1.09	1.99	1.04	1.03	0.62	1.48	0.71	1.62	0.24
unb	6.61	8.33	7.09	7.81	3.10	4.39	3.67	4.79	3.13	3.56	4.41	5.14
±	2.69	1.35	1.35	1.10	1.21	1.32	0.90	0.34	0.86	0.36	1.25	0.44
10Me	-	5.28	4.63	8.86	0.35	1.87	2.30	5.20	0.45	1.39	2.20	5.64
±	-	1.41	1.70	1.70	0.13	1.02	0.85	0.79	0.21	0.25	1.24	0.87
nor <20	19.32	24.08	23.01	21.71	16.08	16.80	14.82	15.04	15.06	14.10	17.40	14.47
±	6.90	4.19	1.82	1.37	2.57	1.81	2.23	1.41	1.27	0.81	3.01	0.09
nor >20	-	1.86	3.18	3.35	0.50	0.82	0.99	2.02	0.58	0.54	1.65	-
±	-	0.61	2.14	1.25	0.19	0.57	0.36	0.30	0.19	0.08	0.78	-
cy	0.75	6.63	7.73	15.91	4.15	6.16	5.33	10.51	3.64	5.28	6.56	10.87
±	0.30	1.80	1.72	2.45	1.00	0.95	1.37	1.53	0.82	0.51	2.23	1.17
-ω5	-	2.25	3.06	2.19	0.92	1.55	1.57	2.45	1.28	2.24	2.78	-
±	-	0.85	0.50	0.43	0.48	0.61	0.30	0.42	0.54	0.27	1.21	-
-ω7	1.15	9.80	9.81	9.43	9.15	10.77	11.08	14.19	11.02	14.62	14.03	16.51
±	0.37	2.07	1.96	4.68	1.38	2.00	1.06	2.17	1.39	0.88	5.41	2.36
-ω8	-	-	-	0.55	0.23	-	-	0.24	0.37	-	-	-
±	-	-	-	0.63	0.11	-	-	0.06	0.13	-	-	-
-ω9	1.74	3.68	4.08	4.17	2.42	3.71	4.33	9.04	2.15	3.86	4.68	9.54
±	0.61	0.81	0.93	2.32	0.52	1.23	0.95	1.40	0.31	0.35	1.59	0.88
-ω11	-	-	-	-	0.15	-	-	0.40	0.32	-	-	0.38
±	-	-	-	-	0.06	-	-	0.11	0.07	-	-	0.04
pufa	63.66	20.05	19.21	6.78	39.12	38.25	41.55	21.17	48.18	40.39	27.55	22.29
±	14.37	13.44	13.65	1.77	12.19	11.78	8.07	5.77	4.39	6.39	14.48	4.43
plel	4.99	1.98	2.03	1.24	17.01	5.03	3.19	1.35	5.13	3.50	3.76	1.23
±	4.35	0.99	0.79	0.56	5.69	2.18	0.91	0.49	1.45	1.33	0.52	0.42

Tab. 1b –Supplemental: Distribution of all individual PLFA (mol%) in control soil and litter treated soil samples (8 weeks, 12 weeks) based on means (n=5) ± standard deviation (SD).

PLFA ± SD	control				8 weeks				12 weeks			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
i14:0	-	1.12	0.60	0.18	0.46	0.48	0.66	0.46	0.88	0.61	0.98	0.46
±	-	0.75	0.24	0.10	0.23	0.14	0.09	0.08	0.21	0.10	0.39	0.06
a14:0	-	1.27	1.19	1.11	0.36	0.79	0.87	1.26	0.94	0.86	1.46	1.25
±	-	0.68	0.55	0.36	0.17	0.29	0.14	0.22	0.35	0.07	0.36	0.05
i15:0	-	4.98	5.08	6.07	1.39	3.24	3.23	3.98	1.85	2.89	4.69	4.71
±	-	1.93	1.88	0.73	0.44	1.15	0.55	0.35	0.42	0.18	1.50	0.35
a15:0	-	4.67	5.21	4.84	2.93	3.62	4.00	4.36	3.43	4.13	5.23	3.99
±	-	1.79	1.25	0.64	1.78	0.59	0.80	0.33	1.09	0.61	1.22	0.18
n15:0	-	1.05	0.89	0.91	0.44	0.60	0.53	0.78	0.50	0.51	0.62	0.58
±	-	0.45	0.20	0.09	0.12	0.10	0.11	0.09	0.11	0.02	0.09	0.02
15:1w8	-	-	-	0.55	-	-	-	-	0.20	-	-	-
±	-	-	-	0.63	-	-	-	-	0.10	-	-	-
i16:0	0.63	1.51	1.95	3.23	0.99	1.04	1.23	1.86	0.94	0.96	1.27	1.84
±	0.14	0.46	0.84	0.59	0.52	0.13	0.39	0.47	0.36	0.12	0.44	0.27
n16:0	19.32	23.03	22.12	20.79	15.64	16.20	14.28	14.26	14.56	13.59	16.77	13.88
±	6.90	3.74	1.62	1.29	2.46	1.72	2.13	1.32	1.16	0.79	2.93	0.07
16:1w5	-	2.25	3.06	2.19	0.92	1.55	1.57	2.45	1.28	2.24	2.78	-
±	-	0.85	0.50	0.43	0.48	0.61	0.30	0.42	0.54	0.27	1.21	-
16:1w7	1.15	3.77	3.74	3.28	4.20	4.02	4.20	4.72	5.30	5.68	4.35	5.24
±	0.37	0.94	0.54	1.04	1.03	0.80	0.39	0.60	0.95	0.44	1.75	0.63
16:1w9	-	0.51	0.51	0.54	0.31	-	-	0.67	0.30	-	-	0.67
±	-	0.15	0.12	0.14	0.09	-	-	0.18	0.08	-	-	0.08
16:1w11	-	-	-	-	0.15	-	-	0.40	0.32	-	-	0.38
±	-	-	-	-	0.06	-	-	0.11	0.07	-	-	0.04
i17:0	-	2.03	1.75	2.36	0.43	1.15	0.93	1.39	0.45	0.88	1.10	1.51
±	-	0.33	0.36	0.38	0.13	0.51	0.22	0.04	0.11	0.12	0.32	0.16
a17:0	1.14	0.48	0.39	0.23	0.23	0.33	0.26	0.27	0.18	0.20	0.24	0.17
±	0.38	0.22	0.15	0.09	0.04	0.16	0.09	0.08	0.04	0.04	0.04	0.01
10Me17:0	-	3.43	3.14	5.68	0.35	1.33	1.53	3.63	0.45	0.80	1.38	3.32
±	-	0.64	1.20	0.83	0.13	0.82	0.55	0.44	0.21	0.13	0.81	0.27
cy17:0	0.75	2.51	3.38	4.32	2.42	3.41	2.72	2.82	1.98	2.70	3.04	3.05
±	0.30	0.68	0.80	0.66	0.35	0.58	0.54	0.45	0.53	0.26	0.91	0.32
br13,17:0	-	3.24	2.34	3.23	1.22	1.79	1.36	1.97	1.10	1.47	1.52	1.88
±	-	0.70	0.52	0.63	0.67	0.65	0.47	0.11	0.31	0.18	0.52	0.28
17:1w8	-	-	-	-	0.23	-	-	0.24	0.17	-	-	-
±	-	-	-	-	0.11	-	-	0.06	0.03	-	-	-
br18:0	5.69	4.12	3.84	3.43	1.63	2.14	1.88	2.12	1.81	1.77	2.29	2.39
±	2.33	0.44	0.67	0.34	0.41	0.47	0.34	0.16	0.49	0.10	0.34	0.11
18:1w7	-	6.04	6.07	6.16	4.95	6.76	6.87	9.46	5.72	8.94	9.68	11.27
±	-	1.13	1.43	3.64	0.35	1.20	0.67	1.57	0.45	0.44	3.66	1.73
18:1w9	1.74	3.18	3.58	3.63	2.12	3.71	4.33	8.37	1.85	3.86	4.68	8.87
±	0.61	0.67	0.82	2.18	0.42	1.23	0.95	1.22	0.24	0.35	1.59	0.81
18:2w6,9	32.26	10.67	4.81	1.21	28.54	27.31	33.71	17.52	33.98	30.74	19.79	18.16
±	7.28	6.94	3.76	0.74	6.96	4.25	6.04	4.58	1.88	2.92	10.02	3.44
18:2w8,12	-	-	2.57	1.14	-	1.04	1.10	0.89	1.30	1.12	1.31	1.19
±	-	-	1.72	0.38	-	0.52	0.32	0.23	0.72	0.21	0.48	0.13
10Me19:0	-	1.85	1.49	3.18	-	0.54	0.77	1.58	-	0.59	0.82	2.32
±	-	0.76	0.49	0.88	-	0.20	0.29	0.35	-	0.12	0.43	0.60
cy19:0	-	4.12	4.35	11.58	1.73	2.75	2.61	7.69	1.66	2.58	3.53	7.82
±	-	1.12	0.92	1.79	0.65	0.37	0.83	1.08	0.29	0.25	1.32	0.86
br20:0	0.92	0.96	0.91	1.15	0.25	0.47	0.44	0.70	0.22	0.32	0.60	0.87
±	0.37	0.21	0.16	0.13	0.12	0.21	0.10	0.07	0.06	0.07	0.38	0.05
i20	4.99	1.98	2.03	1.24	17.01	5.03	3.19	1.35	5.13	3.50	3.76	1.23
±	4.35	0.99	0.79	0.56	5.69	2.18	0.91	0.49	1.45	1.33	0.52	0.42
20:4	31.40	9.38	8.37	2.77	10.58	6.72	5.50	2.14	12.90	6.61	4.56	1.80
±	7.10	6.50	5.84	0.19	5.23	5.24	1.32	0.83	1.78	2.67	2.59	0.37
n22:0	-	0.83	0.96	1.35	0.22	0.40	0.45	0.92	0.22	0.23	0.81	-
±	-	0.17	0.32	0.16	0.12	0.24	0.13	0.09	0.06	0.03	0.26	-
22:4	-	-	3.45	1.66	-	3.19	1.24	0.63	-	1.92	1.88	1.15
±	-	-	2.32	0.46	-	1.78	0.39	0.13	-	0.59	1.39	0.49
n24:0	-	1.03	2.22	1.99	0.28	0.42	0.55	1.10	0.37	0.31	0.84	-
±	-	0.45	1.82	1.09	0.07	0.32	0.23	0.20	0.13	0.05	0.52	-

Tab. 2a –Supplemental: Isotopic signature (‰ $\delta^{13}\text{C}$ vs V-PDB) of the PLFA profile in control soil and litter treated soil samples (8 weeks and 12 weeks) based on means (n=5) $\pm$ standard deviation (SD), summarized according to their chemical structure.

PLFA $\pm$ SD	control				8 weeks				12 weeks			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
iso	-9.69	-26.83	-27.35	-28.85	47.94	15.69	5.94	-12.01	40.59	16.83	0.14	-16.85
$\pm$	4.19	0.79	0.36	1.24	9.65	13.82	11.25	4.24	9.80	5.75	10.61	1.82
ant	-10.48	-26.44	-27.08	-28.86	53.37	26.30	14.22	-7.63	43.53	29.49	4.87	-13.69
$\pm$	2.03	1.27	0.59	0.84	14.23	17.59	12.46	5.31	15.73	8.41	12.01	2.34
unb	-18.23	-27.27	-27.69	-28.55	41.09	10.46	1.42	-15.12	29.76	14.59	-3.37	-19.12
$\pm$	2.18	1.03	0.46	0.69	18.46	16.26	11.59	3.42	14.76	4.78	10.26	1.05
10Me	-	-27.31	-28.57	-28.70	9.16	1.38	-5.54	-19.59	16.09	5.78	-6.79	-21.90
$\pm$	-	1.02	0.93	0.58	3.98	11.79	6.47	1.57	4.27	3.44	7.82	1.07
nor <20	-6.86	-23.96	-27.18	-28.64	56.31	29.57	18.31	-1.40	36.70	30.65	9.34	-8.87
$\pm$	10.74	2.39	1.07	1.19	7.14	17.34	12.85	6.15	10.93	2.55	11.34	3.00
nor >20	-	-30.57	-32.62	-34.09	14.83	-14.06	-21.07	-30.39	-1.61	-13.13	-27.43	-
$\pm$	-	1.17	0.71	0.42	8.33	11.13	6.87	0.52	10.63	2.37	1.84	-
cy	-0.64	-28.64	-29.43	-30.58	48.95	39.20	16.93	-16.12	46.58	37.45	11.08	-19.41
$\pm$	4.40	0.15	0.16	0.44	9.17	15.36	13.08	3.30	15.50	7.14	16.06	1.87
-ω5	-	-23.02	-26.32	-22.38	51.65	7.84	-0.10	-12.40	47.69	5.54	-4.05	-
$\pm$	-	3.26	1.69	1.26	9.55	6.98	11.86	3.67	13.54	4.00	7.68	-
-ω7	-26.70	-29.52	-30.67	-31.44	55.73	21.58	10.50	-6.97	38.84	20.22	2.49	-11.85
$\pm$	4.04	0.34	0.80	1.58	5.17	10.83	13.29	3.04	10.14	4.31	8.46	3.46
-ω8	-	-	-	-	37.49	-	-	-12.15	51.45	-	-	-
$\pm$	-	-	-	-	16.24	-	-	5.90	7.40	-	-	-
-ω9	-5.46	-22.89	-23.71	-23.21	49.58	22.15	15.15	-0.71	38.38	27.68	11.26	-7.78
$\pm$	4.46	1.30	1.29	1.26	6.31	11.84	11.38	6.12	9.75	2.17	11.94	2.46
-ω11	-	-	-	-	46.22	-	-	-10.84	28.60	-	-	-17.53
$\pm$	-	-	-	-	6.46	-	-	2.74	16.93	-	-	2.41
pufa	-13.37	-11.93	-14.39	-6.10	15.67	4.95	4.05	0.51	8.72	5.00	4.36	0.43
$\pm$	3.82	6.26	5.18	3.05	6.94	2.81	2.98	0.09	3.33	0.54	2.47	0.28
plal	-19.79	-25.00	-29.19	-29.11	93.04	67.12	64.88	35.32	85.52	73.65	50.46	20.97
$\pm$	4.52	4.22	1.17	0.75	3.43	19.60	25.57	13.70	5.22	9.33	17.65	9.09

Tab. 2a –Supplemental: Isotopic signature (‰ $\delta^{13}\text{C}$ vs V-PDB) of the all individual PLFA in control soil and litter treated soil samples (8 weeks and 12 weeks) based on means (n=5) $\pm$ standard deviation (SD).

PLFA $\pm$ SD	control				8 weeks				12 weeks			
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
i14:0	-	-27.39	-27.95	-28.46	34.24	19.87	19.38	4.94	27.38	19.91	10.20	-7.45
$\pm$	-	0.99	1.21	1.22	4.97	6.53	14.68	8.82	14.60	6.19	17.49	4.14
a14:0	-	-29.55	-30.37	-32.99	17.35	9.53	2.99	-11.49	12.79	10.93	-3.89	-16.20
$\pm$	-	1.41	1.26	2.88	6.17	12.28	11.04	5.51	9.73	7.68	9.24	1.39
i15:0	-	-26.83	-27.39	-29.41	42.41	13.32	1.93	-12.36	38.52	14.27	-3.35	-17.14
$\pm$	-	0.69	0.45	1.82	9.13	12.32	10.58	3.79	7.05	6.34	8.97	1.87
a15:0	-	-25.87	-26.44	-28.47	57.09	29.77	16.55	-6.89	51.07	32.85	6.91	-13.55
$\pm$	-	1.10	0.49	0.69	14.51	17.72	12.42	5.78	14.08	8.41	12.71	2.47
n15:0	-	-27.48	-28.77	-29.70	49.52	19.43	11.26	-8.12	45.87	24.73	2.80	-16.77
$\pm$	-	1.44	0.46	0.79	3.65	15.04	12.95	6.01	12.13	6.17	11.66	2.40
15:1w8	-	-	-	-28.11	-	-	-	-	63.13	-	-	-
$\pm$	-	-	-	0.53	-	-	-	-	7.58	-	-	-
i16:0	-9.69	-26.12	-27.25	-28.60	63.39	26.41	12.26	-13.49	56.71	28.00	7.32	-16.84
$\pm$	4.19	1.45	0.71	1.12	12.32	19.76	10.75	5.70	14.00	6.39	11.85	1.41
n16:0	-6.86	-23.79	-27.12	-28.59	56.48	29.93	18.58	-1.03	36.38	30.87	9.58	-8.54
$\pm$	10.74	2.47	1.10	1.22	7.24	17.39	12.84	6.18	11.05	2.52	11.32	3.07
16:1w5	-	-23.02	-26.32	-22.38	51.65	7.84	-0.10	-12.40	47.69	5.54	-4.05	-
$\pm$	-	3.26	1.69	1.26	9.55	11.86	3.67	13.54	4.00	7.68	-	-
16:1w7	-26.70	-28.69	-29.10	-29.34	56.38	24.54	11.18	-6.01	38.04	21.76	-3.14	-10.43
$\pm$	4.04	0.76	0.82	0.44	6.35	12.15	12.85	1.96	9.78	5.60	1.60	3.47
16:1w9	-	-27.19	-26.72	-27.38	22.65	-	-	-10.33	24.00	-	-	-15.60
$\pm$	-	1.15	1.76	1.70	15.03	-	-	2.05	9.34	-	-	1.73
16:1w11	-	-	-	-	46.22	-	-	-10.84	28.60	-	-	-17.53
$\pm$	-	-	-	-	6.46	-	-	2.74	16.93	-	-	2.41
i17:0	-	-26.77	-27.22	-28.00	40.97	10.18	1.91	-15.39	37.44	11.15	-2.71	-18.83
$\pm$	-	1.26	0.32	0.86	7.74	14.54	10.09	2.46	7.66	3.67	8.99	1.55
a17:0	-10.48	-23.79	-25.90	-16.76	59.42	26.30	16.75	-2.34	57.66	41.64	13.56	1.62
$\pm$	2.03	2.02	1.64	8.91	4.39	19.53	13.57	2.60	10.07	10.21	13.21	8.60
10Me17:0	-	-28.14	-28.84	-28.97	9.16	-0.15	-9.09	-19.76	16.09	1.76	-11.46	-21.49
$\pm$	-	0.99	0.84	0.76	3.98	11.88	5.10	1.62	4.27	3.47	6.89	1.04
cy17:0	-0.64	-27.18	-28.45	-29.00	73.47	49.60	24.69	-6.61	71.39	50.38	23.50	-12.97
$\pm$	4.40	0.97	0.54	0.83	5.94	15.23	16.25	4.60	10.23	7.78	19.17	2.59
br13,17:0	-	-28.24	-27.60	-28.50	61.00	14.90	7.76	-14.71	53.54	18.32	1.61	-19.51
$\pm$	-	0.99	0.16	0.72	14.48	21.87	10.93	3.90	16.04	6.01	12.39	0.87
17:1w8	-	-	-	-	37.49	-	-	-12.15	51.45	-	-	-
$\pm$	-	-	-	-	16.24	-	-	5.90	7.40	-	-	-
br18:0	-17.75	-25.86	-27.02	-27.49	31.12	12.66	2.97	-10.49	18.84	16.86	-1.61	-15.09
$\pm$	2.81	1.23	0.71	0.81	11.96	13.00	12.10	3.98	14.97	3.86	8.23	1.62
18:1w7	-	-29.98	-31.71	-32.17	54.97	19.86	10.06	-7.65	39.47	19.25	4.79	-12.52
$\pm$	-	0.48	0.84	2.27	4.48	10.09	13.62	4.15	10.41	3.67	12.68	3.43
18:1w9	-5.46	-22.20	-23.33	-22.16	53.71	22.15	15.15	-0.02	40.71	27.68	11.26	-7.18
$\pm$	4.46	1.40	1.36	1.74	7.72	11.84	11.38	6.36	9.44	2.17	11.94	2.58
18:2w6,9	-27.61	-28.40	-26.91	-25.91	78.85	56.34	47.00	29.11	58.79	56.11	35.92	17.60
$\pm$	2.17	1.77	2.24	3.22	1.72	8.46	1.66	6.06	16.66	4.38	15.95	7.29
18:2w8,12	-	-	-28.94	-29.75	-	39.35	30.58	3.13	64.53	41.77	19.48	-2.72
$\pm$	-	-	0.19	0.22	-	5.95	11.31	8.21	9.27	9.87	19.79	5.72
10Me19:0	-	-25.71	-27.71	-28.23	-	5.04	1.34	-18.80	-	11.25	0.37	-22.48
$\pm$	-	0.90	1.71	0.34	-	11.45	8.98	3.58	-	2.90	9.82	1.07
cy19:0	-	-29.42	-30.18	-31.16	11.79	26.15	8.07	-19.72	17.97	23.87	-0.86	-21.99
$\pm$	-	0.28	0.35	0.44	4.91	13.46	11.55	2.24	18.41	5.62	10.29	1.30
br20:0	-20.13	-29.75	-30.68	-31.85	4.08	-16.99	-23.49	-30.17	0.90	-15.51	-25.00	-29.24
$\pm$	2.56	1.11	0.78	0.62	9.95	5.74	5.39	2.31	7.53	1.71	5.32	0.73
i20	-19.79	-25.00	-29.19	-29.11	93.04	67.12	64.88	35.32	85.52	73.65	50.46	20.97
$\pm$	4.52	4.22	1.17	0.75	3.43	19.60	25.57	13.70	5.22	9.33	17.65	9.09
20:4	-20.59	-25.53	-30.97	-32.74	74.75	59.76	57.08	42.14	52.03	62.49	43.21	31.21
$\pm$	6.72	5.15	2.79	0.61	10.25	16.71	2.35	3.92	14.37	9.36	17.93	11.13
n22:0	-	-29.14	-31.32	-33.56	3.58	-16.04	-22.25	-30.41	1.00	-17.07	-29.20	-
$\pm$	-	1.77	1.16	0.52	10.86	9.74	6.29	0.39	8.93	0.16	0.50	-
22,4	-	-	-28.74	-28.87	-	23.09	29.61	9.24	-	28.09	9.23	0.98
$\pm$	-	-	0.81	0.49	-	7.58	10.98	5.71	-	4.88	4.57	5.44
n24:0	-	-32.04	-33.03	-34.66	24.88	-13.73	-19.91	-30.36	-3.86	-10.33	-23.97	-
$\pm$	-	0.90	0.74	0.60	1.95	12.98	7.74	0.69	14.01	4.17	6.97	-