

Supplementary Materials

Table S1. Pearson correlation coefficients between the analyzed chemical and biological parameters along the studied Arenosol (0–200 cm depth) in a Scots pine stand.

Variable	Depth (cm)	pH _{CaCl2}	STN (g kg ⁻¹)	STC (g kg ⁻¹)	C:N	SOC (g kg ⁻¹)	Fungi sequences	MBC (µg C g ⁻¹)	MBN (µg N g ⁻¹)
Depth (cm)	1	0.270	-0.589	-0.565	0.626	-0.581	0.095	-0.907	-0.922
pH _{CaCl2}	—	1	-0.266	-0.752	0.039	-0.754	-0.003	-0.335	-0.353
STN (g kg ⁻¹)	—	—	1	0.560	-0.520	0.572	0.165	0.532	0.471
STC (g kg ⁻¹)	—	—	—	1	-0.210	0.991	0.106	0.553	0.546
C:N	—	—	—	—	1	-0.221	-0.136	-0.474	-0.474
SOC (g kg ⁻¹)	—	—	—	—	—	1	0.063	0.579	0.565
Fungi sequences	—	—	—	—	—	—	1	-0.278	-0.282
MBC (µg C g ⁻¹)	—	—	—	—	—	—	—	1	0.985
MBN (µg N g ⁻¹)	—	—	—	—	—	—	—	—	1

Notes: 0.8–1.0—very strong correlation, 0.6–0.8—strong correlation, and 0.3–0.6—moderate correlation. $p < 0.01$. STN – soil total nitrogen, STC – soil total carbon, C:N – carbon and nitrogen ratio, SOC – soil organic carbon, MBC – soil microbial biomass carbon, MBN – soil microbial biomass nitrogen.

Table S2. p values of soil microbial biomass carbon (MBC) and soil microbial biomass nitrogen (MBN) statistical analysis using Fisher's LSD test.

MBC		
Soil depth (cm)	Soil depth (cm)	<i>p-value</i>
0-5	10-15	0.050
0-5	20-25	0.013
0-5	50-55	0.000
0-5	100-105	0.000
0-5	150-155	0.000
0-5	195-200	0.000
10-15	20-25	0.493
10-15	50-55	0.021
10-15	100-105	0.000
10-15	150-155	0.000
10-15	195-200	0.000
20-25	50-55	0.080
20-25	100-105	0.000
20-25	150-155	0.000
20-25	195-200	0.000
50-55	100-105	0.001
50-55	150-155	0.000
50-55	195-200	0.000
100-105	150-155	0.376
100-105	195-200	0.376
150-155	195-200	1.000
F-ratio = 31.892		

MBN		
Soil depth (cm)	Soil depth (cm)	<i>p-value</i>
0-5	10-15	0.553
0-5	20-25	0.112
0-5	50-55	0.005
0-5	100-105	0.000
0-5	150-155	0.000
0-5	195-200	0.000
10-15	20-25	0.294
10-15	50-55	0.018
10-15	100-105	0.000
10-15	150-155	0.000
10-15	195-200	0.000
20-25	50-55	0.132
20-25	100-105	0.000
20-25	150-155	0.000
20-25	195-200	0.000
50-55	100-105	0.001
50-55	150-155	0.000
50-55	195-200	0.000
100-105	150-155	0.106
100-105	195-200	0.106
150-155	195-200	1.000
F-ratio = 34.933		

Table S3. p values of soil total nitrogen, soil total carbon, soil organic carbon, soil inorganic carbon, and pH based on Duncan's multiple range test.

Soil depth (cm)	Soil depth (cm)	STN	STC	SOC	SIC	pH _{CaCl2}
		<i>p-value</i>	<i>p-value</i>	<i>p-value</i>	<i>p-value</i>	<i>p-value</i>
10-15	20-25	0.1817	0.0000	0.0000	0.8686	0.1117
10-15	50-55	0.0312	0.0000	0.0000	0.3691	0.0913
10-15	100-105	0.0028	0.0000	0.0000	0.2150	0.0472
10-15	150-155	0.0016	0.0000	0.0000	0.9340	0.1048
10-15	195-200	0.0009	0.0000	0.0000	0.6411	0.1556
100-105	20-25	0.0498	0.0007	0.0015	0.2630	0.5890
100-105	50-55	0.2628	0.4627	0.6460	0.6796	0.6777
100-105	150-155	0.7720	0.4480	0.7324	0.1961	0.5913
100-105	195-200	0.5889	0.3768	0.4919	0.3944	0.4187
150-155	20-25	0.0317	0.0035	0.0030	0.8155	0.9904
150-155	50-55	0.1858	0.9430	0.8834	0.3409	0.8735
150-155	195-200	0.7752	0.8676	0.6961	0.5990	0.7530
195-200	20-25	0.0194	0.0038	0.0050	0.7409	0.7569
195-200	50-55	0.1256	0.8228	0.7881	0.6204	0.6568
20-25	50-55	0.3167	0.0036	0.0035	0.4384	0.8760
0-5	10-15	-	-	-	-	0.0571
0-5	20-25	-	-	-	-	0.0029
0-5	50-55	-	-	-	-	0.0024
0-5	100-105	-	-	-	-	0.0012
0-5	150-155	-	-	-	-	0.0026
0-5	195-200	-	-	-	-	0.0040

Notes: STN – soil total nitrogen; STC – soil total carbon; SOC – soil organic carbon; SIC – soil mineral (inorganic) carbon.