

Supplementary material

Table S1. Concentration of N, C/N ratio and isotopic composition of N ($\delta^{15}\text{N}_{\text{veg}}$) and C ($\delta^{13}\text{C}_{\text{veg}}$) in roots of 5 selected plant species (average \pm standard error).

Species	Patch	N, %	C/N ratio	$\delta^{13}\text{C}_{\text{veg}}$, ‰	$\delta^{15}\text{N}_{\text{veg}}$, ‰
<i>Deschampsia caespitosa</i> (L.) Beauv.	NG	0.77 ± 0.12^a	59.86 ± 10.43^a	-27.41 ± 0.19^a	0.67 ± 0.52^a
	LG	0.90 ± 0.07^a	50.90 ± 6.19^a	-27.26 ± 0.11^a	1.04 ± 0.39^a
	SG	0.91 ± 0.06^a	50.56 ± 3.15^a	-27.43 ± 0.23^a	1.55 ± 0.27^a
<i>Festuca</i> sp.	NG	1.02 ± 0.20^a	43.95 ± 7.98^a	-27.61 ± 0.30^a	1.15 ± 0.35^a
	LG	0.88 ± 0.06^a	47.00 ± 2.08^a	-28.15 ± 0.17^a	0.72 ± 0.52^a
	SG	1.04 ± 0.12^a	45.751 ± 16.51^a	-27.78 ± 0.10^a	1.28 ± 0.41^a
<i>Achillea millefolium</i> L.	NG	1.51 ± 0.98^a	29.78 ± 4.27^a	-29.78 ± 0.36^a	0.51 ± 0.42^a
	LG	1.31 ± 0.13^a	34.44 ± 3.48^a	-28.63 ± 0.09^b	0.78 ± 0.68^a
	SG	1.43 ± 0.03^a	28.88 ± 1.33^a	-28.62 ± 0.15^b	1.32 ± 0.09^a
<i>Alchemilla vulgaris</i> L.	NG	0.94 ± 0.10^a	47.09 ± 5.08^a	-28.03 ± 0.34^a	1.02 ± 0.23^a
	LG	0.96 ± 0.11^a	54.70 ± 6.20^{ab}	-27.13 ± 0.12^b	0.63 ± 0.67^a
	SG	1.17 ± 0.15^a	39.80 ± 4.53^b	-27.26 ± 0.18^c	-0.23 ± 0.45^a
<i>Rumex acetosa</i> L.	NG	0.84 ± 0.06^a	51.94 ± 3.68^a	-26.61 ± 0.09^a	0.11 ± 0.49^a
	LG	1.07 ± 0.13^a	41.93 ± 5.23^a	-27.71 ± 0.85^{ab}	1.63 ± 1.21^a
	SG	1.08 ± 0.21^a	48.10 ± 10.22^a	-27.35 ± 0.07^b	2.13 ± 1.24^a

Letters show the significance of ANOVA at $p < 0.05$, the significant differences between management regimes are marked in bold.

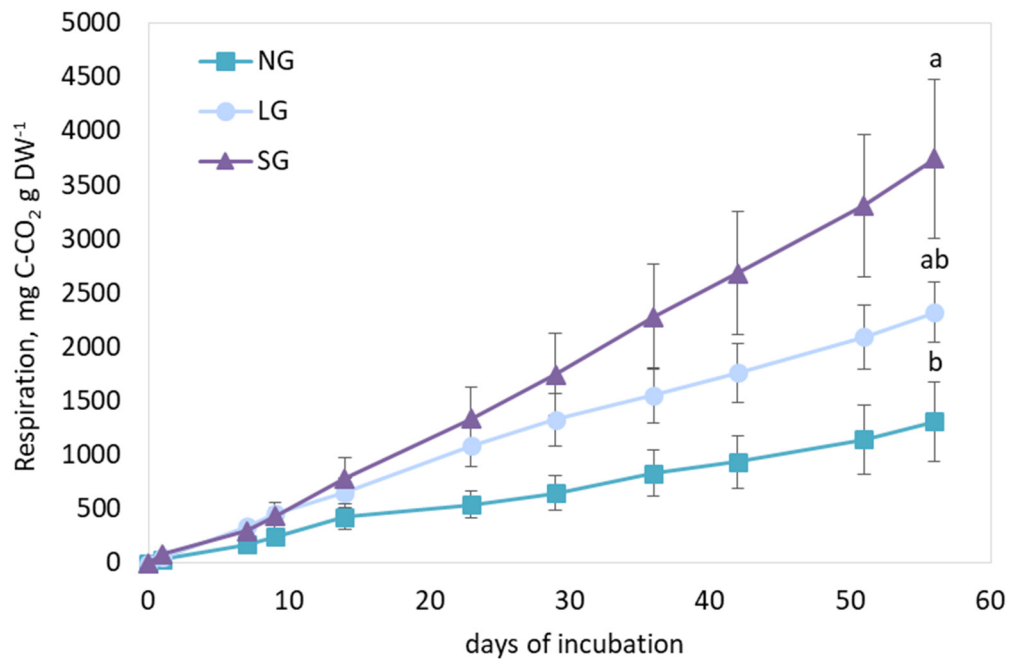


Figure S1. Cumulative respiration after 52 days of incubation of soil in differently managed plots (mean \pm standard error). Letters next to the curves show the significance of ANOVA at $p < 0.05$.

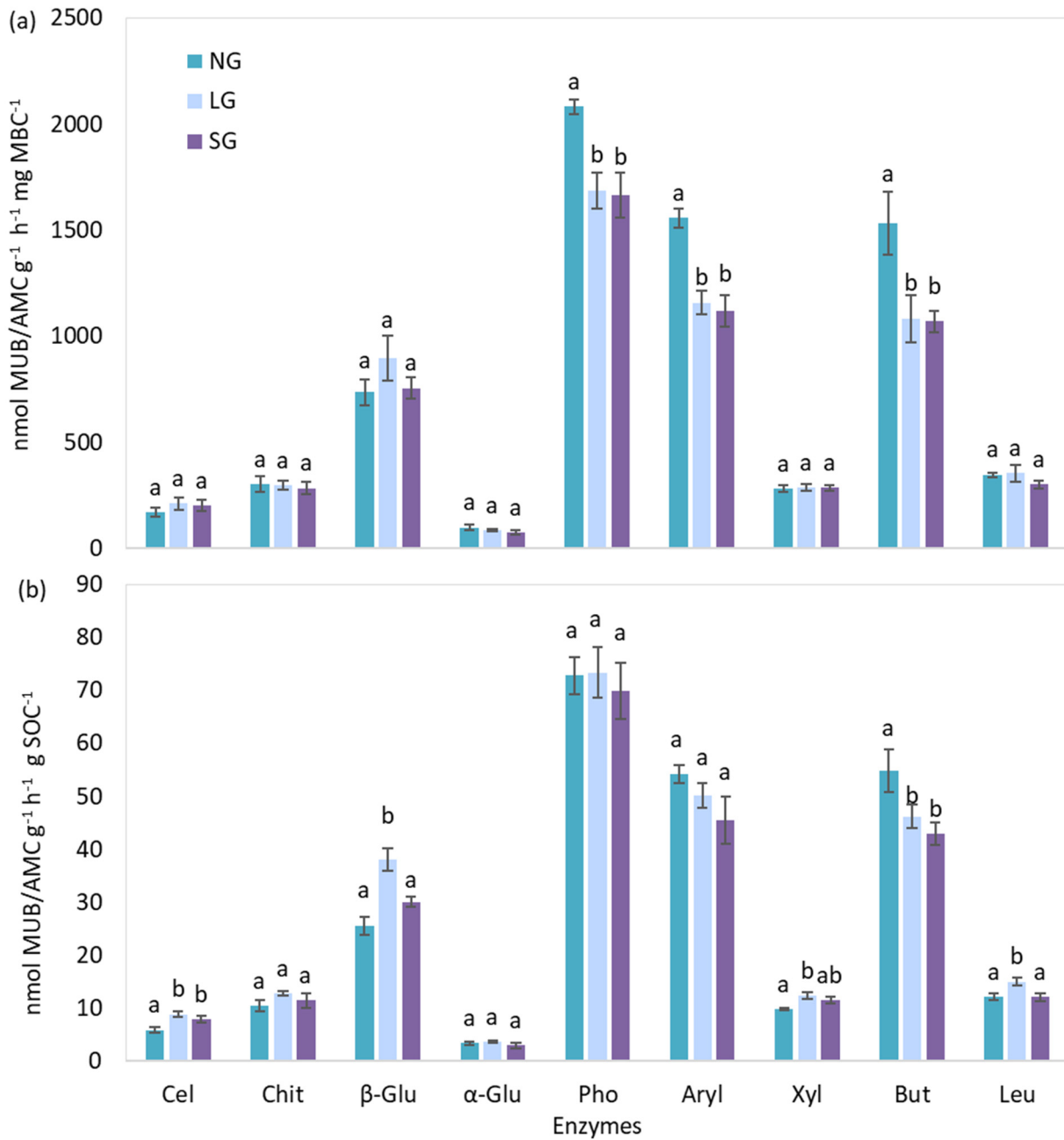


Figure S2. Extracellular enzyme soil activity per unit of SOC (mean \pm standard error) (a) and per unit of MBC (mean \pm standard error) (b). Cel = β -cellobiohydrolase; Chit = Chitinase; β -Glu = β -glucosidase; α -Glu = α -glucosidase; Pho = acid phosphatase; Aryl = arylsulphatase; Xyl = β -xylosidase; But = butyrate esterase; Leu = leucine-aminopeptidase. Letters next to the bars show the significance of ANOVA at $p < 0.05$.

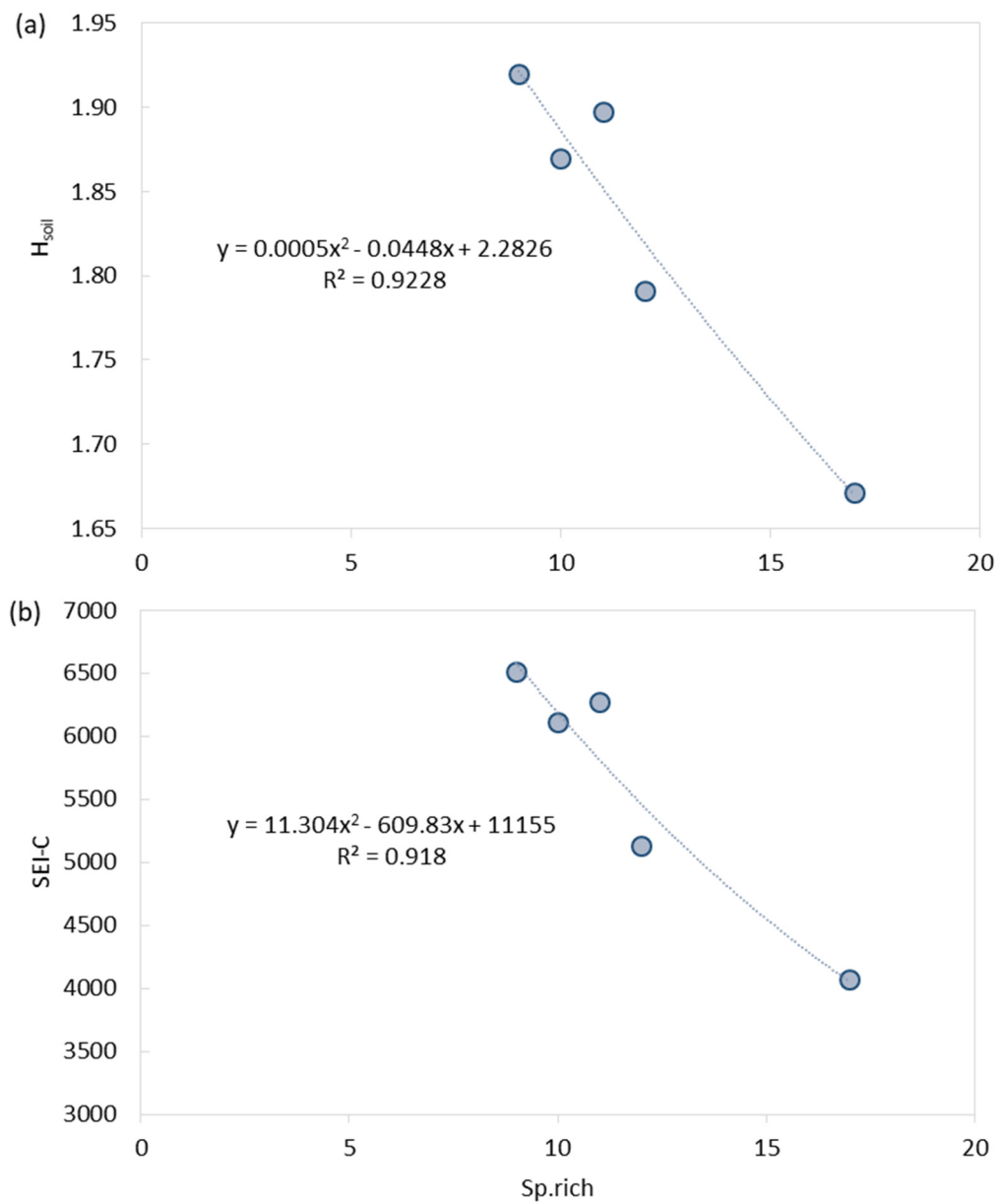


Figure S3. Relation of Shannon microbial diversity (H_{soil}) (a) and synthetic enzymatic index of C-related enzymes (SEI-C) (b) with vegetation species richness (Sp.rich) in LG plots.

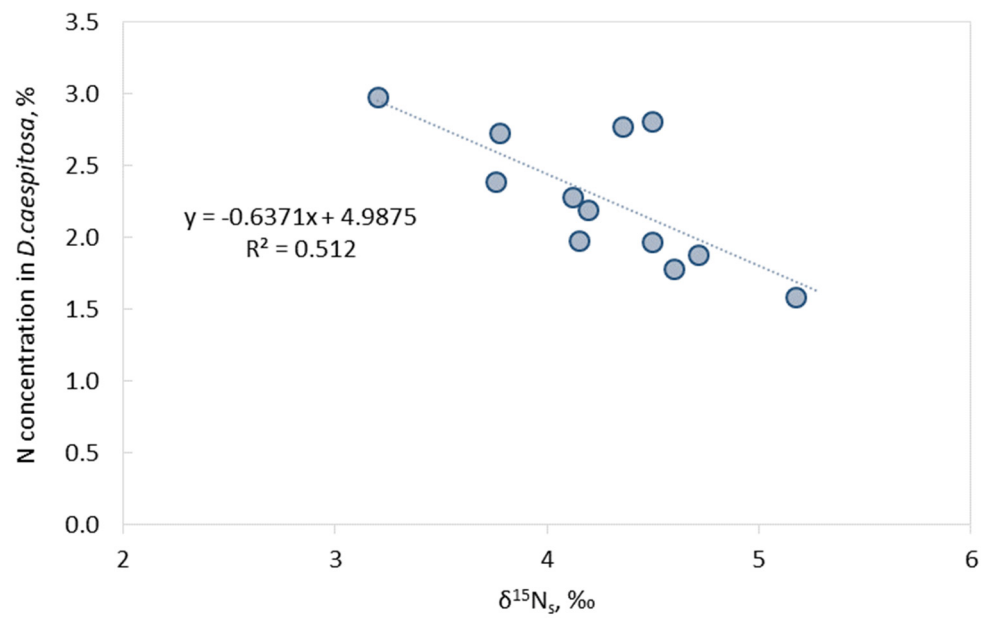


Figure S4. Relation of N concentration of green tissues in *D. caespitosa* with $\delta^{15}\text{N}$ of soil ($\delta^{15}\text{N}_s$).