

Table A1. Repeated measures ANOVA results for aspen clone and litter origin (foreign or native) on belowground responses.

Effect	DF	Litter remaining	Soil respiration	Resin nitrate	Resin ammonium	Soil C	Soil N
clone	9,58	2.77 <i>0.009</i>	2.63 <i>0.040</i>	3.50 <i>0.002</i>	5.66 <i><0.001</i>	8.97 <i><0.001</i>	12.78 <i><0.001</i>
litter origin	1,58	7.95 <i>0.006</i>	n.s.	5.57 <i>0.022</i>	n.s.	n.s.	n.s.
time	7,52	1698 <i><0.001</i>	115.0 <i><0.001</i>	52.36 <i><0.001</i>	38.38 <i><0.001</i>	31.77 <i><0.001</i>	40.42 <i><0.001</i>
clone × origin	9,58	3.10 <i>0.004</i>	n.s.	n.s.	n.s.	n.s.	n.s.
clone × time	63,299	2.31 <i><0.001</i>	2.94 <i><0.001</i>	2.76 <i><0.001</i>	1.95 <i><0.001</i>	1.7 <i><0.001</i>	2.05 <i><0.001</i>
origin × time	7,52	1.86 <i>0.085</i>	n.s.	2.28 <i>0.0538</i>	n.s.	n.s.	2.23 <i>0.047</i>
clone × origin × time	63,299	n.s.	1.48 <i>0.043</i>	n.s.	n.s.	n.s.	n.s.
Effect	DF	β-glucosidase	Cellobiohydrolase	Leucine aminopeptidase	Phenol oxidase	Peroxidase	Urease
clone	9,58	54.20 <i><0.001</i>	38.96 <i><0.001</i>	56.56 <i><0.001</i>	30.41 <i><0.001</i>	12.92 <i><0.001</i>	18.33 <i><0.001</i>
litter origin	1,58	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
time	7,52	296.3 <i><0.001</i>	170.5 <i><0.001</i>	394.6 <i><0.001</i>	413.4 <i><0.001</i>	348.2 <i><0.001</i>	144.7 <i><0.001</i>
clone × origin	9,58	n.s.	n.s.	n.s.	2.52 <i>0.016</i>	n.s.	n.s.
clone × time	63,299	5.69 <i><0.001</i>	7.35 <i><0.001</i>	4.68 <i><0.001</i>	4.08 <i><0.001</i>	5.64 <i><0.001</i>	2.94 <i><0.001</i>
origin × time	7,52	n.s.	n.s.	n.s.	2.64 <i>0.020</i>	4.69 <i><0.001</i>	n.s.
clone × origin × time	63,299	1.92 <i><0.001</i>	1.62 <i>0.004</i>	1.55 <i>0.009</i>	1.45 <i>0.021</i>	1.73 <i>0.001</i>	n.s.

F-values are given with p-values immediately following in italics. p-values greater than 0.10 indicated as n.s.

Table A2. The effect of leaf litter chemistry at time t on belowground responses at time $t+1$. Models with $R^2 = 0$ are omitted for clarity.

Response at time $t + 1$		Lignin	C:N	CT	Lignin, C:N	Lignin, CT	C:N, CT	Lignin, C:N, CT
% remaining	R ²	0.70	0.41	0.39	0.73	0.72	0.47	0.73
	AIC	-421.4	-148.0	-136.5	-460.2	-439.6	-190.9	-460.5
	RMSE	0.143	0.200	0.203	0.136	0.139	0.190	0.136
Soil respiration	R ²	0.26	0.08		0.26	0.37	0.12	0.40
	AIC	900.7	986.6		902.4	837.1	972.6	819.5
	RMSE	0.734	0.816		0.735	0.678	0.801	0.662
Resin NO ₃ ⁻	R ²	0.01	0.01	0.14	0.01	0.18	0.20	0.22
	AIC	1564	1564	1507	1565	1493	1479	1474
	RMSE	1.769	1.770	1.645	1.770	1.613	1.587	1.574
Resin NH ₄ ⁺	R ²	0.07	0.05	0.17	0.08	0.17	0.18	0.18
	AIC	1278	1285	1236	1277	1238	1237	1238
	RMSE	1.406	1.420	1.328	1.401	1.329	1.326	1.326
Soil C	R ²	0.17	0.05	0.14	0.17	0.19	0.14	0.20
	AIC	115.9	169.7	129.6	117.5	107.6	130.3	101.9
	RMSE	0.278	0.297	0.283	0.278	0.275	0.283	0.272
Soil N	R ²	0.19	0.06	0.11	0.19	0.20	0.11	0.20
	AIC	113.7	174.6	149.5	115.3	112.7	151.5	110.4
	RMSE	0.277	0.299	0.290	0.277	0.276	0.290	0.276
PLFA NMS	R ²			0.04		0.07	0.06	0.08
	AIC			846.4		836.4	838.7	833.3
	RMSE			0.707		0.697	0.699	0.693
b-glucosidase	R ²	0.12		0.05	0.21	0.12	0.12	0.24
	AIC	778.5		810.4	734.7	780.5	781.9	720.2
	RMSE	0.631		0.656	0.297	0.632	0.633	0.586
Cello-biohydrolase	R ²	0.02	0.02		0.11	0.06	0.02	0.11
	AIC	777.7	77.8		743.1	761.5	778.9	743.1
	RMSE	0.630	0.630		0.603	0.617	0.630	0.602
Leucine amino-peptidase	R ²	0.02	0.00	0.01	0.04	0.09	0.02	0.09
	AIC	926.9		928.8	921.8	899.7	928.1	901.7
	RMSE	0.760		0.762	0.755	0.734	0.761	0.735
Phenol oxidase	R ²	0.62	0.30	0.42	0.62	0.65	0.44	0.65
	AIC	598.8	839.9	761.9	591.2	558.1	751.9	560.1
	RMSE	0.505	0.681	0.618	0.500	0.480	0.610	0.480
Peroxidase	R ²	0.45	0.23	0.23	0.46	0.46	0.27	0.46
	AIC	672.7	809.1	810.4	668	671.6	789.9	669.8
	RMSE	0.554	0.655	0.656	0.55	0.552	0.639	0.55
Urease	R ²	0.11	0.04	0.10	0.11	0.13	0.10	0.13
	AIC	428.0	460.5	437.5	430.1	423.9	439.3	423.2
	RMSE	0.409	0.426	0.414	0.409	0.406	0.414	0.405