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**Supplementary file S2:** Comparison of linear mixed models for Scots pine and Norway spruce growth response to nitrogen fertilization including single explanatory variables (variables and their units are presented in Table 2). DF is degrees of freedom, AIC is Akaike's Information Criteria,  $R^2$  is coefficient of determination of the fixed effects, and RMSE is residual mean square error. The models were sorted according to ascending AIC-value.

Tree species	Variable	DF	AIC	$R^2$	RMSE	p-value
Scots pine	$F_N$	107	105.7	0.314	0.360	<0.001
	$G_{fertility}$	107	124.2	0.090	0.376	0.003
	$P_a$	107	127.3	0.050	0.378	0.016
	$S_F$	107	127.6	0.178	0.368	0.016
	$V_{ini}$	107	131.5	0.035	0.384	0.206
	$G_{lat}$	107	132.0	0.007	0.382	0.311
	$G_{north}$	107	132.4	0.005	0.384	0.443
	$T_{sum}$	107	132.5	0.004	0.383	0.464
	$G_{middle}$	107	132.8	0.003	0.384	0.606
	$G_{south}$	107	133.0	0.001	0.384	0.777
Norway spruce	$F_N$	56	9.7	0.240	0.210	<0.001
	$P_a$	56	33.1	0.101	0.272	0.041
	$G_{south}$	56	34.5	0.038	0.266	0.092
	$S_F$	56	34.5	0.157	0.278	0.169
	$G_{lat}$	56	34.7	0.032	0.270	0.118
	$T_{sum}$	56	35.5	0.024	0.270	0.189
	$V_{ini}$	56	35.6	0.038	0.267	0.159
	$G_{north}$	56	35.9	0.023	0.276	0.247
$G_{middle}$	56	36.9	0.008	0.273	0.509	