

**S5 Table. Analysis of functional traits in relation to species richness and functional group identity.** Shown is the summary of mixed-effects models testing for effects of species richness (4- and 16-species mixtures) and functional group identity on leaf traits ( $N_{\text{Leaf}}$  = leaf nitrogen concentration, LeafG = leaf greenness, SLA = specific leaf area, LDMC = leaf dry matter content,  $g_s$  = stomatal conductance), and shoot height ( $H_{\text{Shoot}}$ ).

Source of variation	$N_{\text{Leaf}}$ ( $\text{mg g}^{-1}$ )			LeafG		$g_s$ ( $\text{mmol m}^{-2} \text{s}^{-1}$ )	
	df	$\chi^2$	P	$\chi^2$	P	$\chi^2$	P
Species richness (SR)	1	2.45	0.118	1.56	0.211	1.47	0.225
Functional group identity (FG-ID)	3	30.06	<0.001	20.18	<0.001	30.64	<0.001
SR x FG-ID	3	4.69	0.196	3.47	0.325	4.63	0.201
<b>Functional group differences</b>		mean	sd	mean	sd	mean	sd
Grasses		19.7	$\pm 6.6$ b	30.3	$\pm 6.1$ b	202	$\pm 222$ b
Small herbs		17.0	$\pm 4.2$ b	31.4	$\pm 6.7$ b	834	$\pm 368$ a
Tall herbs		21.4	$\pm 5.5$ b	32.5	$\pm 6.6$ b	545	$\pm 170$ a
Legumes		34.7	$\pm 8.9$ a	44.6	$\pm 9.7$ a	421	$\pm 201$ a

  

	SLA ( $\text{mm}^2 \text{mg}^{-1}$ )			LDMC ( $\text{mg g}^{-1}$ )		$H_{\text{Shoot}}$ (cm)	
	df	$\chi^2$	P	$\chi^2$	P	$\chi^2$	P
Species richness (SR)	1	1.35	0.244	<0.01	0.969	0.06	0.807
Functional group identity (FG-ID)	3	6.83	0.077	46.04	<0.001	11.30	0.010
SR x FG-ID	3	2.29	0.514	4.64	0.200	7.66	0.054
<b>Functional group differences</b>		mean	sd	mean	sd	mean	sd
Grasses		15.8	$\pm 4.7$	312	$\pm 33$ a	18	$\pm 10$ a
Small herbs		19.9	$\pm 6.6$	195	$\pm 39$ c	7	$\pm 5$ b
Tall herbs		18.8	$\pm 4.8$	198	$\pm 48$ c	14	$\pm 9$ ab
Legumes		20.3	$\pm 6.7$	244	$\pm 33$ b	18	$\pm 12$ ab

Models were fitted by stepwise inclusion of fixed effects. Listed are the results of likelihood ratio tests ( $\chi^2$ ) that were applied to assess model improvement and the statistical significance of the fixed effects (P values). Results of Tukey's test applied to test for differences among functional groups are indicated with letters.