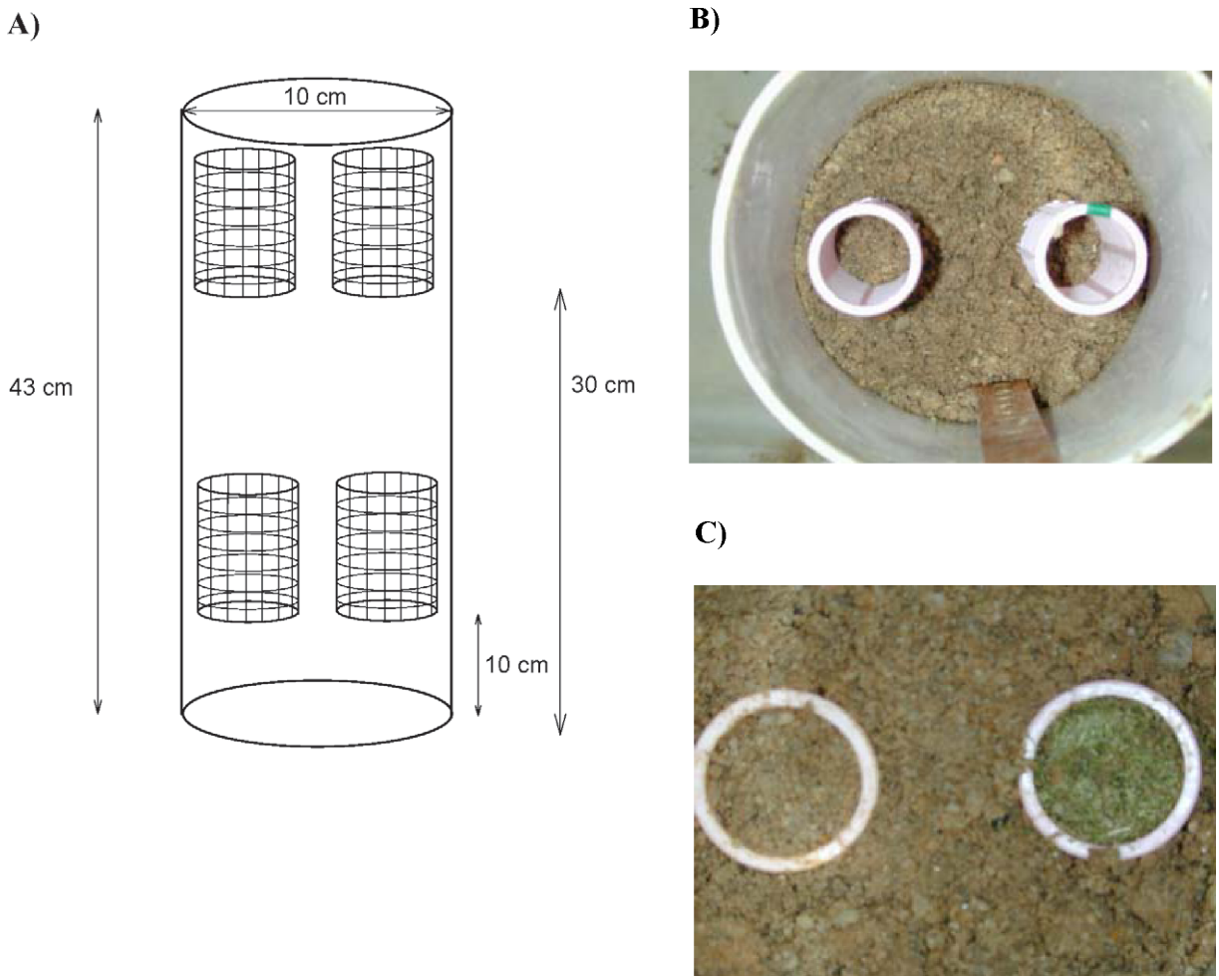
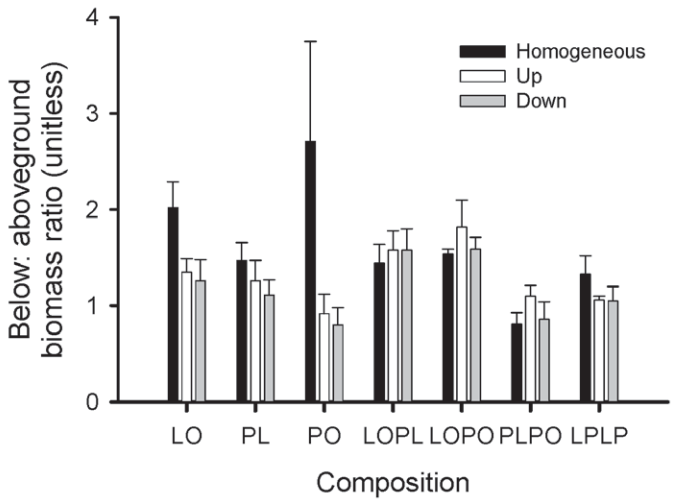


App. 1. Schematic representation of the microcosms used (**A**, not drawn at scale), view of the plastic cylinders placed in each microcosm (**B**), and detail of a nutrient patch and the control cylinder in a heterogeneous up microcosm (**C**).



App. 2. Below-ground : above-ground biomass ratio compared among composition and nutrient heterogeneity levels. Data are means + 1 SE (N = 6). Up and down refers to heterogeneous-up and -down treatments, respectively. LO = *Lolium perenne* monoculture; PL = *Plantago lanceolata* monoculture; PO = *Poa pratensis* monoculture; LOPL = *Lolium* + *Plantago* mixture; LOPO = *Lolium* + *Poa* mixture; PLPO = *Plantago* + *Poa* mixture; LPLP = *Lolium* + *Plantago* + *Poa* mixture.

App. 1-3. Internet supplement to: Maestre, F.T.; Bradford, M.A. & Reynolds, J.F. 2006. Soil heterogeneity and community composition jointly influence grassland biomass. *J. Veg. Sci.* 17: 261-270.

App. 3. Summary of a likelihood-based analysis of models of community biomass data including nutrient heterogeneity and the presence or absence of each of the species used as main fixed factors. In this analysis, separate ANOVAS were performed for each model, and the second-order Akaike information criterion (AICc, Sugiura 1978) was calculated for each case. The model with the smallest AICc is considered the best of the evaluated models, and is shown in bold. K = number of parameters of the ANOVA model, AICD = Akaike information criterion differences; Wi = Akaike weights. See Burnham & Anderson (2002) for details on this approach and on the calculations of the different variables included in this table.

Variable	Factors included in the model*	K	AICc	AICD	Wi
Total biomass	NH + *Poa*	5	-82.08	15.90	0.00
	NH + *Lolium*	5	–79.53	18.45	0.00
	NH + *Plantago*	5	–69.07	28.91	0.00
	NH + *Poa* + *Lolium*	9	–92.13	5.85	0.05
	NH + *Poa* + *Plantago*	9	–78.28	19.70	0.00
	NH + *Lolium* + *Plantago*	**9**	**–97.98**	**0.00**	**0.95**
Above-ground biomass	NH + *Poa*	5	–86.20	15.36	0.00
	NH + *Lolium*	5	–82.42	19.14	0.00
	NH + *Plantago*	5	–75.15	26.41	0.00
	NH + *Poa* + *Lolium*	9	–93.57	7.99	0.02
	NH + *Poa* + *Plantago*	9	–84.55	17.01	0.00
	NH + *Lolium* + *Plantago*	**9**	**–101.56**	**0.00**	**0.98**
Below-ground biomass	NH + *Poa*	5	–71.14	16.07	0.00
	NH + *Lolium*	5	–70.27	16.95	0.00
	NH + *Plantago*	5	–58.22	29.00	0.00
	NH + *Poa* + *Lolium*	9	–82.40	4.82	0.08
	NH + *Poa* + *Plantago*	9	–66.18	21.03	0.00
	NH + *Lolium* + *Plantago*	**9**	**–87.21**	**0.00**	**0.92**
Below: aboveground biomass†	NH + *Poa*	5	–166.62	4.36	0.06
	NH + *Lolium*	**5**	**–170.97**	**0.00**	**0.55**
	NH + *Plantago*	5	–169.49	1.49	0.26
	NH + *Poa* + *Lolium*	9	–161.22	9.75	0.00
	NH + *Poa* + *Plantago*	9	–165.16	5.81	0.03
	NH + *Lolium* + *Plantago*	9	–167.34	3.63	0.09

* Each model included main effects and all possible interactions among the included factors. NH = nutrient heterogeneity; *Poa* = presence/absence of *Poa pratensis*; *Lolium* = presence/absence of *Lolium perenne* and *Plantago* = presence/absence of *Plantago lanceolata*.

† ANOVAS were conducted with the residuals from a regression between the log-transformed below-ground : above-ground ratio and total biomass.

References

Burnham, K.P. & Anderson, D.R. 2002. *Model selection and multimodel inference. A practical information-theoretic approach*. 2nd. ed. Springer, New York, NY, US.

Sugiura, N. 1978. Further analysis of the data by Akaike's information criterion and the finite corrections. *Comm. Stat. Theory Methods* A7: 13-26.