Aldorfová, A., Knobová, P. and Münzbergová, Z. 2020. Plant–soil feedback contributes to predicting plant invasiveness of 68 alien plant species differing in invasive status. – Oikos doi: 10.1111/oik-07186

Table A1: Summary characteristics of the neophytes in the Czech flora studied in the present paper, shown separately for invasive (n = 27) and non-invasive (n = 41) alien species. Differences between invasive and non-invasive species tested with chi-square test or one-way ANOVA, for minimum residence time and species frequency on square-root and ln transformed data, respectively.

	Non-invasive	Invasive	Difference
Life history	annuals 15 (37 %) monocarpic perennials 9 (22 %) polycarpic perennials 17 (41 %)	annuals 13 (48 %) monocarpic perennials 4 (15 %) polycarpic perennials 10 (37 %)	$X^2 = 1.378$; df = 2; p = 0.502
Minimum residence time (years, mean ± sd)	144.7 ± 54.6	156.5 ± 37.6	F = 1.289; df = 1, 59; p = 0.261
Max cover (%, mean ± sd) (min, max)	35.6 ± 31.4 (1-88)	70.4 ± 35.2 (1-99)	F = 5.1427; df = 1, 55; p = 0.027
Species frequency (number of occupied grids, mean ± sd); (min, max)	392.3 ± 534.8 (5-1851)	657.3 ± 563.5 (30-2190)	F = 7.722; df = 1, 65; p = 0.007
Phylogenetic novelty (absence of native congener growing in the same habitats)	No – 17 (41 %) Yes – 24 (59 %)	No – 13 (48 %) Yes – 14 (52 %)	$X^2 = 0.591$; df = 1; p = 0.442

Table A2: List of studied species, their description and PSF indices for biomass and seedling establishment. p-values indicate whether seedling establishment or biomass in the feedback phase are affected by soil treatment (conditioned, not-conditioned). Significant values ($p < 0.05$) are in bold, marginally significant values ($p < 0.1$) in italics. Life history: an – annual, mono – monocarpic perennial, per – polycarpic perennial. Invasion status: inv – invasive, non-inv – non-invasive. MRT – minimum residence time (number of years elapsed since the first record of occurrence in the Czech Republic). Species frequency – number of colonized quadrants of basic cells in grid mapping. Maximum cover – maximum cover in the field, number of popul. – number of populations studied; asterisks indicate that seeds from a commercial supplier were used for one population. Year of planting: 1 = 2015, 2 = 2016, 3 = 2017. NA – information not available.

Species	Family	Life history	Optimal habitat	Invasion status	Minimum residence time [years]	Species occurrence	Maximum cover [%]	Seedling establishment		Biomass		Number of popul.	Year of planting
								PSF index (mean ± sd)	p-value	PSF index (mean ± sd)	p-value		
Abutilon theophrasti Med.	Malvaceae	an	anthropogenic vegetation	non-inv	124	61	4	**0.372 ± 0.247**	**0.014**	0.018 ± 0.537	0.649	3 *	2, 3
Amaranthus albus L.	Amaranthaceae	an	anthropogenic vegetation	non-inv	125	181	63	0.24 ± 0.523	0.251	-0.331 ± 0.817	0.485	3	2, 3
Amaranthus powellii S. Watson	Amaranthaceae	an	anthropogenic vegetation	inv	165	433	88	*0.06 ± 0.627*	*0.063*	-0.075 ± 0.47	0.866	2	1, 2
Amaranthus retroflexus L.	Amaranthaceae	an	anthropogenic vegetation	inv	200	931	63	**0.686 ± 0.881**	**0.001**	-0.093 ± 0.763	0.168	3	1
Ambrosia artemisiifolia L.	Asteraceae	an	anthropogenic vegetation	inv	135	92	1	-0.022 ± 0.268	0.588	0.07 ± 1.263	0.761	4 *	2, 3
Ambrosia trifida L.	Asteraceae	an	anthropogenic vegetation	non-inv	58	8	88	0.055 ± 0.58	0.111	**-0.183 ± 0.337**	**0.013**	3	3
Antirrhinum majus L.	Plantaginaceae	mono	vegetation of cliffs, screes and walls	non-inv	199	70	3	**0.245 ± 0.648**	**0.034**	-0.019 ± 0.613	0.512	3	3
Asclepias syriaca L.	Apocynaceae	per	anthropogenic vegetation	inv	117	86	88	*0.161 ± 0.55*	*0.075*	**0.407 ± 0.497**	**0.008**	3	2
Aster lanceolatus Willd.	Asteraceae	per	wetland and riverine herbaceous vegetation	inv	NA	189	NA	**-0.747 ± 0.358**	**<0.001**	**0.439 ± 0.464**	**0.005**	3	3
Bidens frondosus L.	Asteraceae	an	wetland and riverine herbaceous vegetation; heathlands and scrub	inv	124	1360	88	-0.012 ± 0.57	0.836	0.162 ± 0.343	0.393	2	1, 2
Bunias orientalis L.	Brassicaceae	mono	anthropogenic vegetation	inv	162	344	88	*-0.324 ± 0.5*	*0.053*	*-0.441 ± 0.675*	*0.059*	2 *	3
Cannabis ruderalis Janisch.	Cannabinaceae	an	anthropogenic vegetation	inv	150	30	3	0.01 ± 0.294	0.298	0.157 ± 0.861	0.304	2	2
Cardamine chelidonia L.	Brassicaceae	mono	forests; anthropogenic vegetation	non-inv	88	20	NA	-0.34 ± 0.538	0.2	-0.063 ± 0.739	0.509	2	3
Chenopodium pumilio R. Br.	Amaranthaceae	an	anthropogenic vegetation	non-inv	128	113	3	**-0.442 ± 0.365**	**0.015**	**-1.719 ± 1.449**	**0.001**	1	1
Chenopodium strictum Roth	Amaranthaceae	an	anthropogenic vegetation	non-inv	NA	532	2	**-0.611 ± 0.697**	**0.047**	**-0.321 ± 0.646**	**0.014**	5	1, 2
Claytonia alsinoides Sims	Montiaceae	an	forests	non-inv	67	NA	NA	**-0.618 ± 0.585**	**0.003**	**-1.772 ± 1.243**	**<0.001**	2	3
Collomia grandiflora Lindl.	Polemoniaceae	an	anthropogenic vegetation	non-inv	138	5	NA	-0.111 ± 0.583	0.902	-0.135 ± 0.514	0.268	3	3
Conyza canadensis (L.) Cronq.	Asteraceae	an	vegetation of cliffs, screes and walls; sand grasslands and rock-outcrop vegetation; anthropogenic vegetation	inv	268	1463	88	**0.957 ± 1.005**	**0.025**	0.475 ± 0.656	0.133	3	1
Datura stramonium L.	Solaginaceae	an	anthropogenic vegetation	non-inv	209	286	38	**0.586 ± 1.013**	**<0.001**	0.342 ± 1.913	0.683	4	1, 2
Digitalis purpurea L.	Plantaginaceae	mono	heathlands and scrub; forests; anthropogenic vegetation	non-inv	228	650	63	-0.375 ± 0.858	0.879	-0.079 ± 0.733	0.279	2	1, 2
Duchesnea indica (Andrew) Focke	Rosaceae	per	meadows and mesic pastures	non-inv	58	38	1	**-0.626 ± 0.501**	**0.009**	**-0.593 ± 1.26**	**0.015**	2	3
Echinocystis lobata (Michx.) Torr. et Gray	Cucurbitaceae	an	wetland and riverine herbaceous vegetation; heathlands and scrub, anthropogenic vegetation	inv	107	253	88	-0.166 ± 0.366	0.803	**-1.26 ± 0.82**	**0.027**	1	3
Echinops sphaerocephalus L.	Asteraceae	per	anthropogenic vegetation	inv	147	729	88	-0.156 ± 0.45	0.727	0.009 ± 0.289	0.684	2	1

Species	Family	Life history	Optimal habitat	Invasion status	Minimum residence time [years]	Species occurrence	Maximum cover [%]	Seedling establishment		Biomass		Number of popul.	Year of planting
								PSF index (mean ± sd)	p-value	PSF index (mean ± sd)	p-value		
Epilobium ciliatum Rafin.	Onagraceae	per	wetland and riverine herbaceous vegetation; meadows and mesic pastures; heathlands and scrub; anthropogenic vegetation	inv	92	1851	38	**0.168 ± 0.784**	**0.011**	-0.176 ± 1.454	0.831	4	3
Erigeron annuus (L.) Pers.	Asteraceae	mono	wetland and riverine herbaceous vegetation; heathlands and scrub; anthropogenic vegetation	inv	134	388	63	0.110 ± 0.171	0.341	0.414 ± 0.607	0.104	1 *	2
Galinsoga parviflora Cav.	Asteraceae	an	anthropogenic vegetation	inv	138	1198	88	*-0.17 ± 0.303*	*0.1*	0.248 ± 1.07	0.314	4	2, 3
Galinsoga quadriradiata Ruiz et Pavón	Asteraceae	an	wetland and riverine herbaceous vegetation; anthropogenic vegetation	inv	117	1215	88	**0.52 ± 0.436**	**0.007**	-0.113 ± 1.244	0.591	1	3
Geranium pyrenaicum Burm. fil.	Geraniaceae	per	meadows and mesic pastures; anthropogenic vegetation	non-inv	199	530	38	0.125 ± 0.39	0.139	-0.101 ± 0.285	0.52	3	2, 3
Helianthus tuberosus L.	Asteraceae	per	wetland and riverine herbaceous vegetation; anthropogenic vegetation	inv	133	578	99	-0.139 ± 0.619	0.859	0.081 ± 1.602	0.177	2	3
Heracleum mantegazzianum Sommier et Levier	Apiaceae	mono	meadows and mesic pastures; heathlands and scrub; anthropogenic vegetation	inv	156	694	99	-0.097 ± 0.18	0.203	-0.028 ± 0.526	0.565	2	3
Hesperis matronalis L.	Brassicaceae	per	dry grasslands; heathlands and scrub; forests; anthropogenic vegetation	non-inv	201	552	18	**-0.482 ± 0.502**	**0.007**	**-0.469 ± 0.612**	**0.012**	2 *	2, 3
Impatiens glandulifera Royle	Balsaminaceae	an	wetland and riverine herbaceous vegetation; heathlands and scrub; anthropogenic vegetation	inv	122	1214	90	-0.079 ± 0.494	0.92	**-0.471 ± 0.633**	**0.005**	3	3
Impatiens parviflora DC.	Balsaminaceae	an	vegetation of cliffs, screes and walls; wetland and riverine herbaceous vegetation; heathlands and scrub; forests; anthropogenic vegetation	inv	148	2190	99	-0.434 ± 0.335	0.645	*-0.442 ± 0.642*	*0.093*	2	1, 3
Imperatoria ostruthium L.	Apiaceae	per	anthropogenic vegetation	non-inv	209	123	63	*-0.239 ± 0.299*	*0.077*	0.068 ± 1.102	0.863	3	3
Iva xanthiifolia Nutt.	Asteraceae	an	anthropogenic vegetation	non-inv	71	55	88	-0.637 ± 0.891	0.35	**-1.331 ± 1.168**	**0.017**	1	3
Kochia scoparia (L.) Schrader	Amaranthaceae	an	anthropogenic vegetation	inv	199	138	88	-0.288 ± 0.55	0.133	-0.046 ± 0.279	0.435	3	3

Species	Family	Life history	Optimal habitat	Invasion status	Minimum residence time [years]	Species occurrence	Maximum cover [%]	Seedling establishment		Biomass		Number of popul.	Year of planting
								PSF index (mean ± sd)	p-value	PSF index (mean ± sd)	p-value		
Lepidium densiflorum Schrader	Brassicaceae	mono	anthropogenic vegetation	non-inv	114	244	38	**0.259 ± 0.281**	**0.046**	**0.747 ± 0.645**	**0.008**	1	3
Lupinus polyphyllus Lindl.	Fabaceae	per	meadows and mesic pastures; heathlands and scrub; anthropogenic vegetation	inv	123	1167	70	-0.092 ± 0.374	0.682	-0.142 ± 0.572	0.692	3 *	2
Lychnis coronaria (L.) Desr.	Caryophyllaceae	mono	anthropogenic vegetation	non-inv	139	67	2	-0.521 ± 0.636	0.731	-0.454 ± 0.469	**0.015**	3	1, 2
Lysimachia punctata. L.	Primulaceae	per	anthropogenic vegetation	non-inv	199	423	2	*0.254 ± 0.575*	*0.073*	0.283 ± 0.875	0.294	2 *	3
Matricaria discoidea DC.	Asteraceae	an	meadows and mesic pastures; anthropogenic vegetation	non-inv	165	1733	88	**0.954 ± 0.548**	**<0.001**	0.393 ± 1.459	0.101	2	3
Medicago sativa L.	Fabaceae	per	meadows and mesic pastures; dry grasslands; anthropogenic vegetation	non-inv	199	1020	63	*-0.113 ± 0.403*	*0.078*	-0.183 ± 0.485	0.246	2	1, 2
Mimulus guttatus DC.	Phrymaceae	per	wetland and riverine herbaceous vegetation	non-inv	165	163	13	0.096 ± 0.719	0.104	**0.33 ± 0.58**	**<0.001**	4 *	2, 3
Oenothera biennis L.	Onagraceae	mono	sand grasslands and rock-outcrop vegetation; anthropogenic vegetation	non-inv	187	621	NA	*-0.132 ± 0.501*	*0.078*	-0.237 ± 0.511	0.114	3	1, 2, 3
Oenothera glazioviana M. Micheli	Onagraceae	mono	sand grasslands and rock-outcrop vegetation; anthropogenic vegetation	non-inv	128	177	NA	0.183 ± 0.282	0.183	**-0.146 ± 0.291**	**0.017**	2	1
Oxalis dillenii Jacq.	Oxalidaceae	mono	anthropogenic vegetation	inv	NA	75	2	0.201 ± 0.454	0.404	**0.463 ± 0.966**	**0.018**	3	3
Oxalis fontana Bunge	Oxalidaceae	mono	vegetation of cliffs, screes and walls; anthropogenic vegetation	non-inv	166	1043	38	0.024 ± 0.535	0.458	**0.643 ± 1.127**	**0.048**	1	3
Phytolacca esculenta Van Houtte	Phytolaccaceae	per	heathlands and scrub; forests; anthropogenic vegetation	non-inv	62	35	NA	**0.51 ± 0.871**	**<0.001**	**0.916 ± 2.127**	**<0.001**	3	3
Rudbeckia hirta L.	Asteraceae	per	anthropogenic vegetation	non-inv	145	77	38	0.068 ± 0.556	0.208	0.193 ± 0.556	0.317	2	1, 3
Rudbeckia laciniata L.	Asteraceae	per	anthropogenic vegetation	inv	159	343	13	0.217 ± 0.477	0.118	-0.013 ± 0.983	0.846	1	1
Rumex alpinus L.	Polygonaceae	per	wetland and riverine herbaceous vegetation; anthropogenic vegetation	non-inv	199	65	90	-0.026 ± 0.305	0.865	**-0.405 ± 0.429**	**<0.001**	3	1
Rumex longifolius DC.	Polygonaceae	per	anthropogenic vegetation	non-inv	NA	46	NA	0.064 ± 0.38	0.423	-0.203 ± 0.623	0.178	2	3
Rumex patientia L. subsp. patientia	Polygonaceae	per	anthropogenic vegetation	inv	157	32	38	-0.111 ± 0.352	0.777	-0.172 ± 0.442	0.402	2	3
Rumex thyrsiflorus Fingerh.	Polygonaceae	per	meadows and mesic pastures; dry grasslands	non-inv	NA	401	13	**-0.765 ± 0.76**	**0.031**	*-0.206 ± 0.526*	*0.079*	3	2
Scutellaria altissima L.	Lamiaceae	per	forests; anthropogenic vegetation	non-inv	117	18	NA	-0.29 ± 0.521	0.395	0.037 ± 0.218	0.705	1 *	3

Species	Family	Life history	Optimal habitat	Invasion status	Minimum residence time [years]	Species occurrence	Maximum cover [%]	Seedling establishment		Biomass		Number of popul.	Year of planting
								PSF index (mean ± sd)	p-value	PSF index (mean ± sd)	p-value		
Sedum hispanicum L.	Crassulaceae	per	anthropogenic vegetation	non-inv	NA	334	2	**0.441 ± 0.573**	**0.003**	-0.573 ± 1.357	0.278	3	3
Sedum rupestre L. subsp. erectum t´Hart	Crassulaceae	per	vegetation of cliffs, screes and walls; dry grasslands; sand grasslands and rock-outcrop vegetation; forests	non-inv	NA	61	38	0.091 ± 0.474	0.342	**-1.779 ± 1.147**	**<0.001**	1	3
Senecio inaequidens DC.	Asteraceae	per	anthropogenic vegetation	non-inv	21	116	NA	-0.186 ± 0.801	0.939	0.009 ± 1.281	0.512	3	3
Setaria faberi F. Herrmann	Poaceae	an	anthropogenic vegetation	non-inv	57	19	1	-0.28 ± 0.608	0.4	*-0.211 ± 0.321*	*0.07*	1	3
Sisymbrium altissimum L.	Brassicaceae	an	sand grasslands and rock-outcrop vegetation; anthropogenic vegetation	non-inv	203	287	88	0.008 ± 0.588	0.9	**0.633 ± 1.72**	**0.034**	4 *	2
Sisymbrium loeselii L.	Brassicaceae	an	forests; anthropogenic vegetation	inv	199	409	88	**-0.668 ± 1.005**	**0.002**	**-0.37 ± 0.996**	**0.009**	3	1, 2
Sisymbrium strictissimum L.	Brassicaceae	per	anthropogenic vegetation	non-inv	199	325	13	-1.226 ± 0.661	0.133	**-0.584 ± 1.654**	**<0.001**	1	3
Solidago canadensis	Asteraceae	per	heathlands and scrub; anthropogenic vegetation	inv	180	1202	99	1.644 ± 0.423	0.389	0.097 ± 0.498	0.392	1	1
Telekia speciosa (Schreber) Baumg.	Asteraceae	per	anthropogenic vegetation	inv	198	305	1	-0.074 ± 0.659	0.813	-0.066 ± 0.889	0.776	3	1, 2
Trifolium hybridum L.	Fabaceae	mono	wetland and riverine herbaceous vegetation; meadows and mesic pastures; saline vegetation	non-inv	199	1783	88	0.031 ± 0.497	0.353	*0.361 ± 1.342*	*0.093*	4 *	2, 3
Veronica persica Poiret	Plantaginaceae	an	anthropogenic vegetation	non-inv	209	1838	63	**0.296 ± 0.471**	**0.002**	-0.018 ± 0.348	0.707	3	3
Vicia grandiflora Scop.	Fabaceae	an	anthropogenic vegetation	non-inv	141	42	NA	-0.041 ± 0.325	0.922	*-0.120 ± 0.367*	*0.085*	3	3
Xanthium albinum (Widd.) H. Scholtz et Sukopp	Asteraceae	an	wetland and riverine herbaceous vegetation; anthropogenic vegetation	non-inv	167	106	2	-0.142 ± 0.303	0.443	-0.048 ± 0.372	0.593	3 *	2

Table A3: Abiotic characteristics of the soil prior to the conditioning phase. Values show the mean and standard deviation of six samples. The analyses were performed by the Analytical Laboratory of Institute of Botany, Czech Academy of Sciences, Průhonice. The methods used for the analyses are described in detail in Raabova et al. (2008).

	mean ± sd
pH(KCl)	7.66 ± 0.06
total N [%]	0.07 ± 0.01
total C [%]	1.51 ± 0.25
exchangeable Ca [mg/kg]	2272.77 ± 357.71
exchangeable Mg [mg/kg]	164.81 ± 33.62
exchangeable K [mg/kg]	84.92 ± 21.16
exchangeable P [mg/kg]	31.54 ± 4.57
total P [mg/kg]	246.47 ± 34.85

Table A4: Results of mixed effect models with i) seedling establishment and ii) biomass from the feedback phase as dependent variables and phylogenetic eigenvectors (axes 1-3), MRT, soil treatment, measure of invasion and their interaction as explanatory variables. Measure of invasion: invasion status, square-root transformed species frequency and maximum cover, respectively. Species, populations, pairs of pots, and year of planting were used as random effects. DenDF - Satterthwaite approximation for degrees of freedom. NumDF = 1 for all variables. Significant values ($p < 0.05$) are in bold, marginally significant values ($p < 0.1$) are in italics. Species frequency – number of colonized quadrants of basic cells in grid mapping. Maximum cover – based on maximum cover in the field, taken from the Pladias database (Chytry 2016), transformed into a discrete variable with three levels (low cover < 10 %, medium 11-50 %, high > 50 %).

			axis1	axis2	axis3	MRT	soil treatment	measure of invasion	meas. of invasion * soil treat.
Seedling establishment	invasion status	DenDF	161.3	*160.2*	160.4	**161.0**	**3037.1**	160.6	**3037.0**
		F	1.54	*3.37*	0.00	**8.26**	**11.90**	0.05	**3.53**
		p	0.216	*0.068*	0.973	**0.005**	**0.001**	0.823	**0.049**
	species frequency	DenDF	159.4	*158.2*	158.6	**158.6**	2996.4	**330.0**	**2999.4**
		F	1.73	*3.36*	0.07	**8.34**	1.27	**5.36**	**9.88**
		p	0.190	*0.069*	0.259	**0.004**	0.259	**0.005**	**0.002**
	maximum cover	DenDF	134.3	**133.2**	133.5	**133.9**	**2546.7**	*133.6*	**2546.4**
		F	0.00	**6.92**	0.11	**4.71**	**10.78**	*2.74*	**5.61**
		p	0.965	**0.010**	0.739	**0.032**	**0.001**	*0.069*	**0.004**
Biomass	invasion status	DenDF	161.3	160.7	*160.8*	161.1	**3026.7**	160.9	3026.5
		F	1.45	0.01	*2.98*	1.83	**24.50**	0.47	1.50
		p	0.230	0.920	*0.086*	0.178	**<0.001**	0.494	0.220
	species frequency	DenDF	159.3	158.7	158.9	158.9	**2987.2**	312.5	2988.6
		F	1.42	0.26	1.05	0.85	**10.45**	1.17	0.17
		p	0.236	0.611	0.306	0.359	**0.001**	0.217	0.679
	maximum cover	DenDF	134.2	133.7	133.8	134.1	**2545.5**	133.9	*2545.4*
		F	0.80	0.61	0.06	0.03	**14.23**	0.93	*2.54*
		p	0.372	0.438	0.814	0.860	**<0.001**	0.396	*0.079*

Table A5: Comparison of delta AIC for models studying the effect of various species characteristics on invasive status, species frequency and maximum cover in the field. Underlined variables are data obtained in this study. For invasive status, we used generalized linear models with binomial error distribution, for species frequency linear models on square-root transformed data and for maximum cover linear models with multinomial error distribution ('multinom' function in 'nnet' package in R, Venables and Ripley, 2002). Values in bold indicate models that were significantly better ($p < 0.05$) than the null model. Asterisks indicate that the variable was selected for the optimal model, using the 'dredge' function in the 'MuMIn' package in R (Bartoń 2019).

	invasion status		species frequency		maximum cover	
	delta AIC	rank	delta AIC	rank	delta AIC	rank
specific leaf area	**-23.217**	**1 ***	**-170.788**	**1 ***	**-41.780**	**1 ***
releasing height	**-21.801**	**2 ***	**-92.106**	**2 ***	**-18.587**	**2 ***
MRT	**-6.814**	**3**	**-57.521**	**3 ***	**-11.483**	**3 ***
seedling growth rate	**-3.111**	**4**	**-26.486**	**4 ***	**-1.396**	**7**
PSF seedling establishment	**-1.871**	**5**	**-16.757**	**5**	**-0.024**	**11**
anemochory	0.065	6	**-14.767**	**6**	**-2.460**	**6**
ploidy level	0.227	7	**-6.385**	**8**	**-0.249**	**10**
propagule length-width ratio	0.404	8	**-8.217**	**7**	**-0.608**	**8**
buyoancy	0.667	9	1.606	15	3.392	15
PSF biomass	0.814	10	0.997	10	3.508	16
seedling establishment	0.956	11	1.302	14	2.256	13
germination	1.519	12	1.284	13	2.685	14
number of propagules per m^2	1.783	13	1.781	16	3.959	17
genome size	1.932	14	1.113	11	**-4.354**	**5**
phylogenetic novelty	1.982	15	**-3.193**	**9**	0.2077	12
propagule weight	1.991	16	1.245	12	**-0.354**	**9**
life history	2.979	17	3.012	17	**-4.447**	**4**

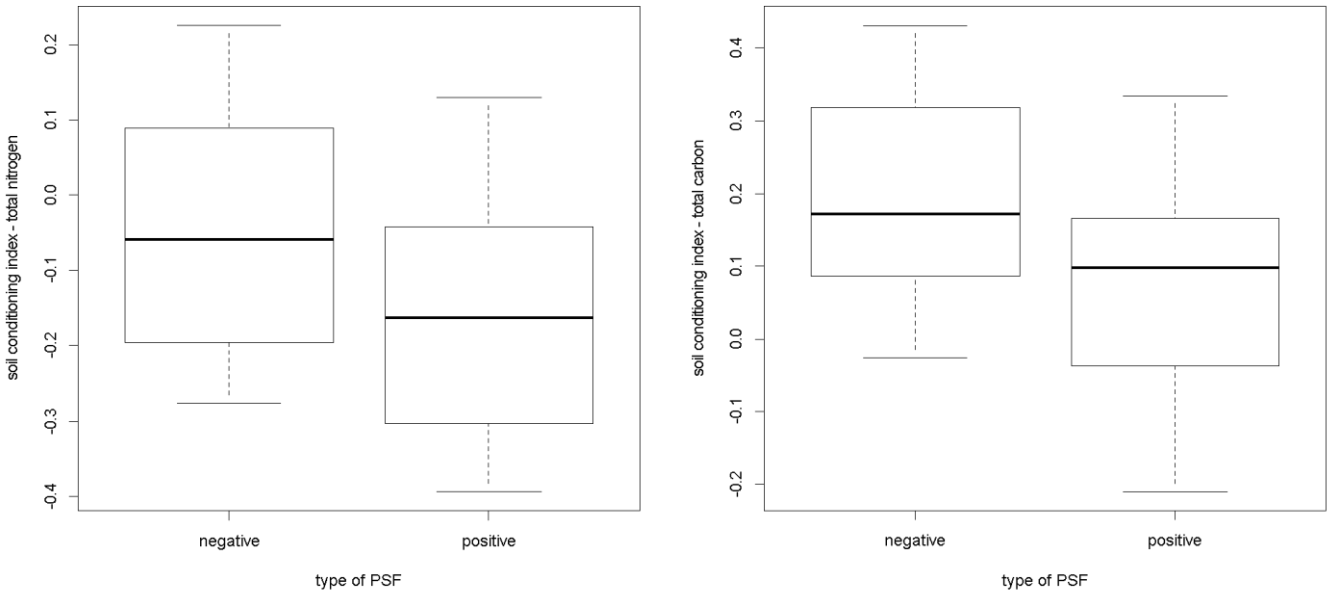

Fig. A1: Soil conditioning index for (a) total nitrogen and (b) total carbon in soil conditioned by species with negative and with positive PSF. The index is calculated as ln (value of conditioned soil / value of control soil). The plots are based on data of five species with negative and five species with positive PSF.

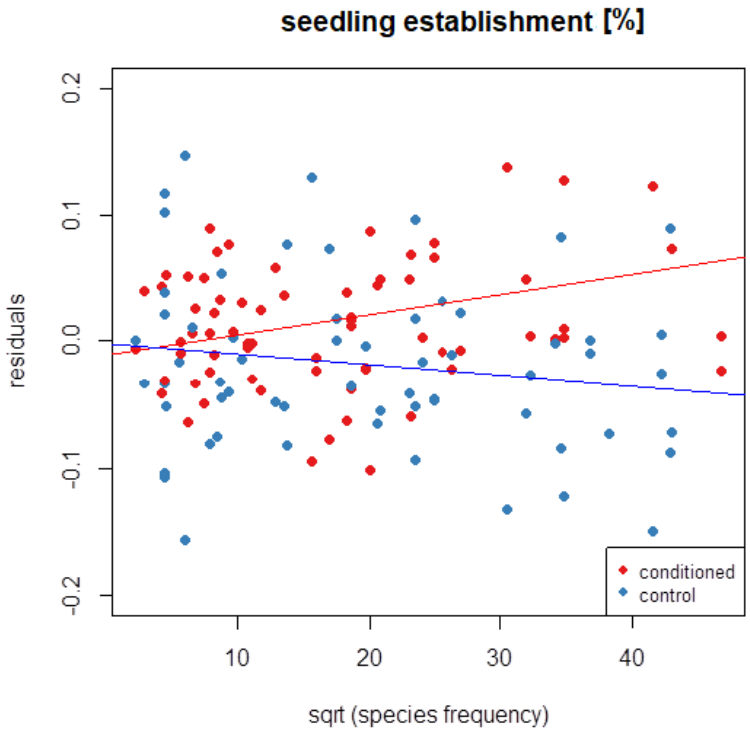

Fig. A2: Dependence of mean residuals for seedling establishment across species, after accounting for phylogenetic information, MRT and random effect of species, population, year of planting and pairs of pots, on square-root transformed species frequency in quadrants of the basic grid mapping cells for conditioned and control soil. Better performance in conditioned soil compared to control indicates positive PSF, better performance in control soil compared to conditioned soil indicates negative PSF.

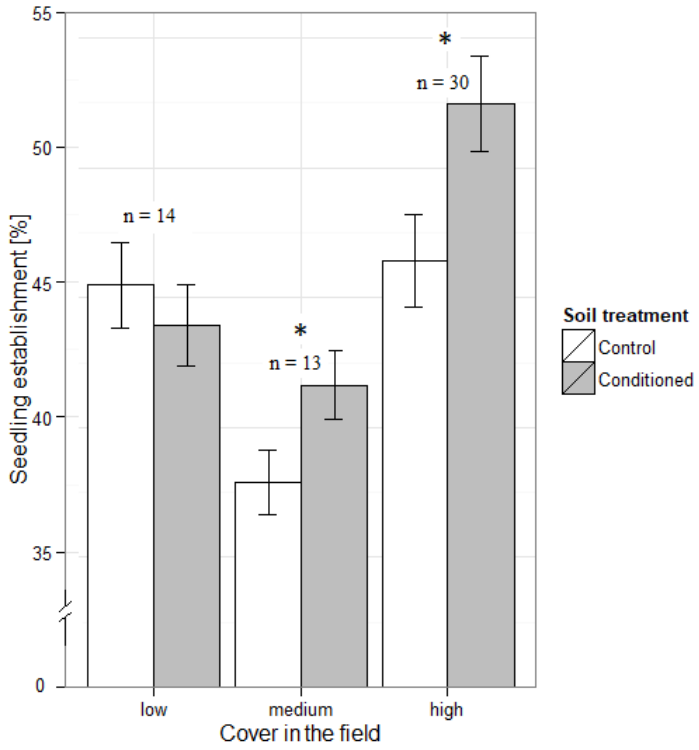

Fig. A3: Seedling establishment of species with low (< 10 %), medium (11-50 %) and high (> 50 %) maximum cover in the field in control and conditioned soil (mean ± SE). Asterisks indicate significant ($P < 0.05$) difference between control and conditioned soil. Better performance in conditioned soil compared to control indicates positive PSF, better performance in control soil compared to conditioned soil indicates negative PSF. Number of species in each category in indicated by n.

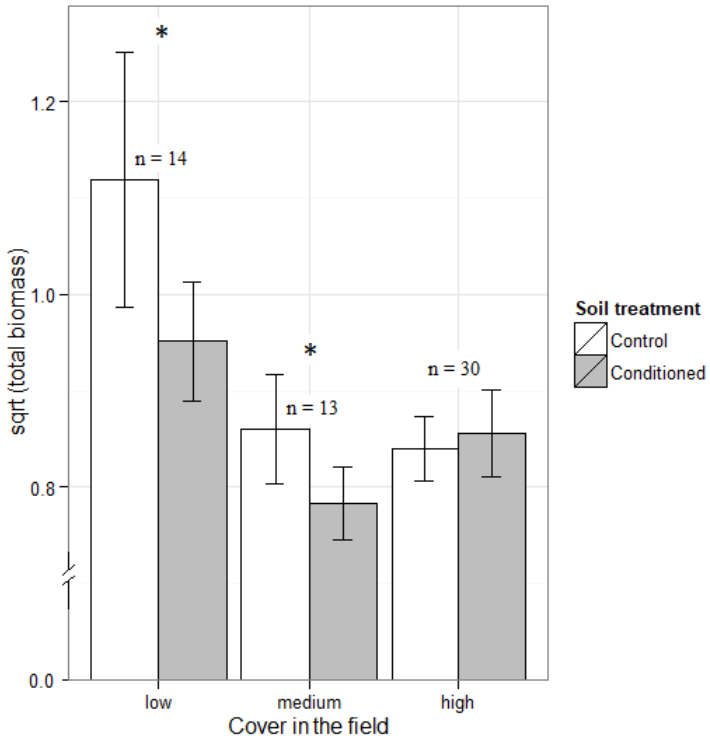

Fig. A4: Square-root transformed biomass of species with low (< 10 %), medium (11-50 %) and high (> 50 %) maximum cover in the field in control and conditioned soil (mean ± SE). Asterisks indicate significant ($P < 0.05$) difference between control and conditioned soil. Better performance in conditioned soil compared to control indicates positive PSF, better performance in control soil compared to conditioned soil indicates negative PSF. Number of species in each category in indicated by n.

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