

Plant neighbors shape fungal assemblages associated with plant roots: a new understanding of niche partitioning in plant communities

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Supporting information

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Reference

20 Birouste, M., Zamora-Ledezma, E., Bossard, C., Pérez-Ramos, I.M. & Roumet, C. (2014). Measurement of fine root tissue density: a comparison of three methods reveals the potential of root dry matter content. *Plant and Soil*, 374, 299-313.

Tab. S1: Trait presentation and measurement protocol. Protocols are from *Cornellissen et al. (2003)*.

Trait list	Process targeted	Measurement protocol
Global		
Total dry mass (g)	Growth rate	Total dry mass was measured after drying plant total biomass during 72h at 65°C
Root:Shoot	Investment strategy of the plant dedicated to belowground organs (i.e. uptake of soil resources and storage) or to aboveground organs (i.e. uptake of light)	Root:Shoot was measured after weighting separately below-ground and above-ground organs, that were dried during 72h at 65°C
Aboveground organs		
Height (cm)	Occupation of space in height and which is foraged for light by the plant	Plant height was measured at 0.1cm resolution from the stem basis to the last leaf
SLA (cm ² /mg)	Relative investment of plants in photosynthesis relatively to the maintenance of leaf defence	SLA measured as the area of a leaf divided by its dry mass
LWC (mg/mg)	Leaf life-span	LWC measured as the average density of the leaf tissues
Belowground organs		
Primary root Length (cm)	Occupation of space in depth and the volume of soil foraged by the plant	Primary root length measured at 0.1cm resolution from the basis of the stem to the root apex of the main axis
Root dry mass (g)	Production of roots including fine and coarse roots	Root dry mass measured after drying plant roots during 72h at 65°C
RWC (mg/mg)	Root tissue density	RWC measured as the average density of the root tissues

25 **Tab. S2:** Mean Values for functional traits describing plant strategies. Traits were measured on 10 replicates per plant species (*M. truncatula* was the focal plant species and the other species were the neighbor plants). SLA: Specific Leaf Area; LWC: Leaf Water Content; RWC: Root Water Content.

Taxonomic family	Species	Whole plant		Aboveground organs			Belowground organs		
		Total dry mass (g)	Root:Shoot	Height (cm)	SLA (cm ² /mg)	LWC (mg/mg)	Primary root Length (cm)	Root dry mass (g)	RWC (mg/mg)
Focal plant									
<i>Fabaceae</i>	<i>Medicago truncatula</i>	0.145	0.329	11.06	10.42	0.135	22.16	0.038	0.079
Neighboring plant									
<i>Fabaceae</i>	<i>Trifolium pratense</i>	0.165	0.381	15.52	21.73	0.115	17.37	0.044	0.080
	<i>Medicago lupulina</i>	0.084	0.533	8.13	10.48	0.200	19.52	0.030	0.077
	<i>Lotus corniculatus</i>	0.107	0.464	13.97	16.03	0.109	20.60	0.034	0.069
<i>Asteraceae</i>	<i>Bellis perennis</i>	0.087	1.020	6.12	13.25	0.105	15.42	0.043	0.097
	<i>Achillea millefolium</i>	0.054	0.396	8.48	14.24	0.113	16.17	0.015	0.086
	<i>Leotodon hispidus</i>	0.057	0.811	6.65	15.60	0.094	18.56	0.027	0.101
<i>Rosaceae</i>	<i>Sanguisorba minor</i>	0.024	0.320	7.68	14.48	0.173	9.80	0.007	0.182
	<i>Potentilla erecta</i>	0.088	0.129	7.49	14.33	0.167	9.03	0.010	0.098
	<i>Fragaria vesca</i>	0.041	0.132	5.71	18.17	0.177	10.46	0.006	0.077
<i>Brassicaceae</i>	<i>Brassica nigra</i>	0.144	0.332	9.45	6.34	0.153	15.01	0.033	0.104
	<i>Capsella bursa-pastoris</i>	0.228	0.440	8.33	10.68	0.143	19.00	0.065	0.099
	<i>Barbarea vulgaris</i>	0.133	0.446	6.74	7.72	0.183	20.03	0.035	0.086
<i>Poaceae</i>	<i>Dactylis glomerata</i>	0.115	0.515	27.54	14.47	0.161	17.46	0.039	0.105
	<i>Holcus lanatus</i>	0.140	0.594	25.08	16.61	0.161	17.06	0.056	0.078
	<i>Phleum pratensis</i>	0.101	0.703	24.32	17.76	0.149	19.86	0.042	0.091

Figure S1: *Phylogenetic and Functional Distances between M. truncatula and the neighbor species used in the experiment. Phylogenetic distance was calculated. Functional distances were calculated using . x-axis corresponded to the 15 neighbouring plant tested: TPRA: Trifolium pratense; MLUP: Medicago lupulina; LCOR: Lotus corniculatus; BPER: Bellis perennis; AMIL: Achillea millefolium; LHIS: Lotus hispidus; SMIN: Sanguisorba minor; PERE: Potentilla erecta; FVES: Fragaria vesca; BNIG: Brassica nigra; CBUR: Capsella bursa-pastoris; BVUL: Barbarea vulgaris; DGLO: Dactylis glomerata; HLAN: Holcus lanatus; PPRA; Phleum pratense.*

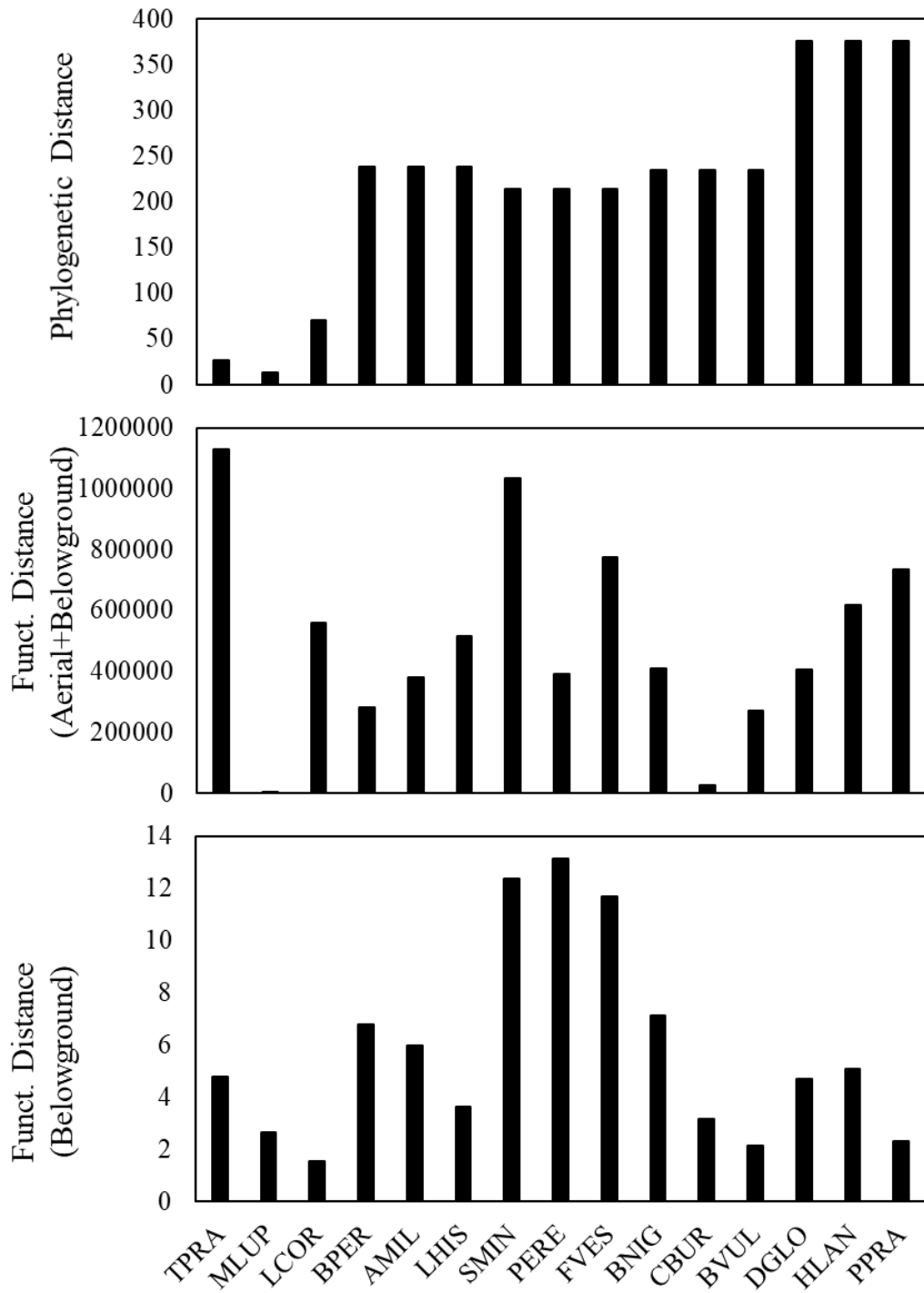


Figure S2: Rarefaction curves based on the total set of samples (focal plant and matrix plant species)

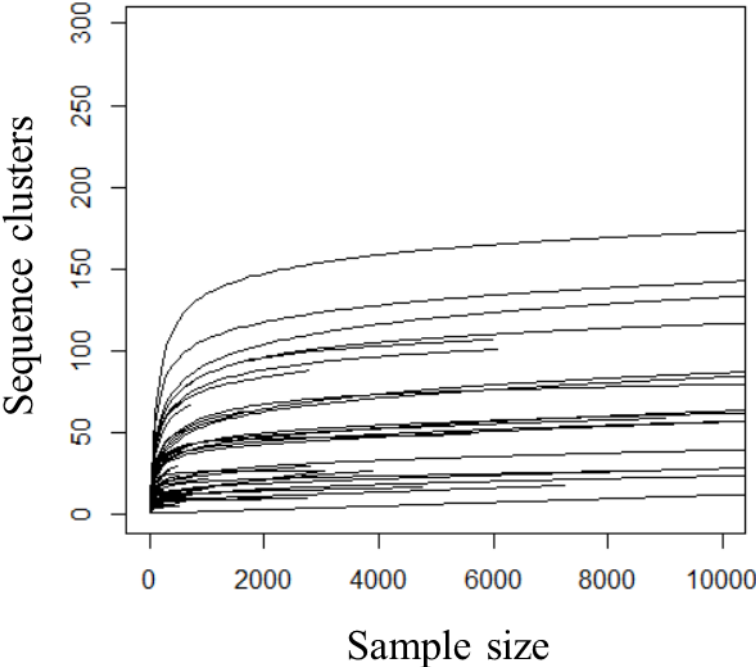


Figure S3: Community description at the order, family and genus (for *Glomeraceae*) scales (Number of sequence clusters and Percentage of sequences) in neighbor plants. TPRA: *Trifolium pratense*; MLUP: *Medicago lupulina*; LCOR: *Lotus corniculatus*; BPER: *Bellis perennis*; AMIL: *Achillea millefolium*; LHIS: *Lotus hispidus*; SMIN: *Sanguisorba minor*; PERE: *Potentilla erecta*; FVES: *Fragaria vesca*; BNIG: *Brassica nigra*; CBUR: *Capsella bursa-pastoris*; BVUL: *Barbarea vulgaris*; DGLO: *Dactylis glomerata*; HLAN: *Holcus lanatus*; PPRA; *Phleum pratense*.

