Decreased diversity and connectivity of endophytic fungal assemblages within cultivated European olive trees compared to their native African counterpart

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1.1 Supplementary materials

Table S1. Summary of the properties of the sites from which the host plant material was collected. Habitat and host characteristics that were recorded were altitude (m), mean annual precipitation (MAP) and prevailing vegetation types surrounding the sampled olive trees. When sites allowed, sampling was spread out to cover as much of the location as possible to allow maximum coverage of the olive endophytes in the area. Sampling was also spread out to cover all the cultivars on the farms sampled.

Location		Host	Cultivars	Altitude (m)	MAP (mm)	Vegetation
Clanwilliam*	Alpha Excelsior Farm	*Olea europaea* subsp. *europaea*	Mission, Frantoio	500	180–600	Cederberg Sandstone Fynbos
	Cederberg Mountain	*Olea europaea* subsp. *cuspidata*				
Paarl*	De Hoop Farm & residential gardens	*Olea europaea* subsp. *europaea*	Mission, Leccino, Frantoio	200 – 300	270–2 220	Boland Granite Fynbos
	Paarl Mountain Reserve	*Olea europaea* subsp. *cuspidata*				Swartland Shale Renosterveld
						Swartland Granite Renosterveld
Stellenbosch[%]	Residential gardens	*Olea europaea* subsp. *europaea*	Mission	50 – 240	610–2 220	Boland Granite Fynbos
	Stellenbosch Mountain, Jan Marais	*Olea europaea* subsp. *cuspidata*				Swartland Shale Renosterveld
	Nature Reserve & Onderpapegaaiberg					
Somerset	Residential gardens	*Olea europaea* subsp. *europaea*	Mission	100 – 150	610–2 220	Boland Granite Fynbos
West[Δ]	Helderberg Nature Reserve	*Olea europaea* subsp. *cuspidata*		150		
Robertson[Δ]	Marbrin Olive Growers	*Olea europaea* subsp. *europaea*	Frantoio, Coratina, Mission	240	210–610	Breede Shale Renosterveld

	Langeberg mountain foothills	*Olea europaea* subsp. *cuspidata*		330		
Swellendam*	Mardouw Olive Estate	*Olea europaea* subsp. *europaea*	Frantoio, Leccino, Coratina	160	300–1 300	Breede Shale Renosterveld
	Foothills of Langeberg mountain	*Olea europaea* subsp. *cuspidata*				

*Hosts sampled were in adjacent plots, [Δ]Hosts sampled were distant from each other (separated by 5 to 10 km), [%]Samples of both hosts were spread out and intermingled with each other

Alpha-diversity *post hoc* results

Table S2. Linear models' *post hoc* results of fungal richness (richness, core richness, rarefied richness and core rarefied richness) between hosts and between sites. Significant when $p < 0.05$ (*).

		Richness			Richness (core)			Rarefied richness			Rarefied richness (core)		
variable1	variable2	SE	z-value	Pr(>|z|)	SE	z-value	Pr(>|z|)	SE	t-value	Pr(>|t|)	SE	t-value	Pr(>|t|)
O. europaea subsp. *europaea*	*O. europaea* subsp. *cuspidata*	0.042	-11.7	<2e-16*	0.270	0.932	0.351	0.815	-2.751	0.007*			
Paarl	Clanwilliam	0.075	5.265	0.001*	0.235	2.049	0.305				0.896	1.052	0.885
Robertson	Clanwilliam	0.07	9.865	0.001*	0.209	6.173	<0.001*				0.934	1.059	0.882
Somerset West	Clanwilliam	0.081	1.63	0.576	0.228	2.434	0.139				0.891	-0.593	0.99
Stellenbosch	Clanwilliam	0.074	4.92	0.001*	0.214	4.412	<0.001*				0.887	1.221	0.804
Swellendam	Clanwilliam	0.072	8.325	0.001*	0.215	5.078	<0.001*				0.939	1.085	0.871
Robertson	Paarl	0.063	4.732	0.001*	0.166	4.868	<0.001*				0.885	0.053	1

Somerset West	Paarl	0.075	-3.491	0.006*	0.190	0.388	0.999	0.741	-1.987	0.317
Stellenbosch	Paarl	0.068	-0.427	0.998	0.172	2.684	0.075	0.392	0.359	0.999
Swellendam	Paarl	0.065	3.186	0.018*	0.174	3.516	0.006*	0.890	0.085	1
Somerset West	Robertson	0.07	-7.966	0.001*	0.156	-4.707	<0.001*	0.881	-1.724	0.48
Stellenbosch	Robertson	0.062	-5.253	0.001*	0.134	-2.569	0.101	0.877	0.108	1
Swellendam	Robertson	0.059	-1.497	0.664	0.136	-1.437	0.696	0.401	0.072	1
Stellenbosch	Somerset West	0.074	3.134	0.021*	0.163	2.389	0.154	0.730	2.208	0.208
Swellendam	Somerset West	0.072	6.499	0.001*	0.164	3.271	0.013*	0.885	1.747	0.464
Swellendam	Stellenbosch	0.064	3.67	0.003*	0.144	1.034	0.903	0.882	-0.074	1

Table S3. Linear models *post hoc* results of fungal abundance (abundance, core abundance, relative abundance and core relative abundance) between hosts and between sites. Significant when $p < 0.05$ (*).

		Abundance			Abundance (core)			Relative abundance		
variable1	variable2	SE	z-value	Pr(>|z|)	SE	z value	Pr(>|z|)	SE	t-value	Pr(>|t|)
O. europaea subsp. *europaea*	*O. europaea* subsp. *cuspidata*	0.002	51.1	<2e-16*	0.005	-42.45	<2e-16*	5.616	8.092	1.07E-05*
Paarl	Clanwilliam	0.003	-98.12	<2e-16*	0.127	2.193	0.237			
Robertson	Clanwilliam	0.003	-142.7	<2e-16*	0.116	6.793	<0.001*			
Somerset West	Clanwilliam	0.003	-62.77	<2e-16*	0.135	0.068	1			
Stellenbosch	Clanwilliam	0.003	-154.8	<2e-16*	0.127	2.309	0.187			

Swellendam	Clanwilliam	0.003	-15.49	<2e-16*	0.116	6.629	<0.001*
Robertson	Paarl	0.004	-43.98	<2e-16*	0.105	4.803	<0.001*
Somerset West	Paarl	0.004	31.78	<2e-16*	0.127	-2.127	0.27
Stellenbosch	Paarl	0.004	-56.65	<2e-16*	0.117	0.117	1
Swellendam	Paarl	0.003	80.12	<2e-16*	0.106	4.628	<0.001*
Somerset West	Robertson	0.004	74.7	<2e-16*	0.115	-6.735	<0.001*
Stellenbosch	Robertson	0.004	-12.91	<2e-16*	0.105	-4.692	<0.001*
Swellendam	Robertson	0.004	123.78	<2e-16*	0.092	-0.184	1

Stellenbosch	Somerset West	0.004	-86.92	<2e-16*	0.126	2.243	0.215	
Swellendam	Somerset West	0.003	46.46	<2e-16*	0.116	6.571	<0.001*	
Swellendam	Stellenbosch	0.004	135.86	<2e-16*	0.105	4.517	<0.001*	

Table S4. Species richness and core species richness linear models *post hoc* results of the interaction between both hosts and sites. Comparisons considered significant when $p < 0.05$ (*). Oa = *O. europaea* subsp. *cuspidata* and oe = *O. europaea* subsp. *europaea*

		Richness				Richness (core)			
		Estimate	SE	z-value	Pr(>|z|)	Estimate	SE	z-value	Pr(>|z|)
oaPaarl	oaClanwilliam	-0.187	0.004	-42.017	<0.01*	0.482	0.235	2.049	0.643
oaRobertson	oaClanwilliam	-0.454	0.005	-97.261	<0.01*	1.289	0.209	6.173	<0.01*
oaSomerset West	oaClanwilliam	-0.331	0.004	-73.605	<0.01*	0.556	0.228	2.434	0.367
oaStellenbosch	oaClanwilliam	-0.540	0.005	-112.628	<0.01*	0.944	0.214	4.412	<0.01*
oaSwellendam	oaClanwilliam	0.062	0.004	15.312	<0.01*	1.093	0.215	5.078	<0.01*
oeClanwilliam	oaClanwilliam	0.211	0.004	51.096	<0.01*	0.251	0.270	0.932	0.999
oaRobertson	oaPaarl	-0.267	0.005	-53.772	<0.01*	0.807	0.166	4.868	<0.01*
oaSomerset_West	oaPaarl	-0.144	0.005	-29.999	<0.01*	0.074	0.190	0.388	1.000
oaStellenbosch	oaPaarl	-0.353	0.005	-69.419	<0.01*	0.463	0.172	2.684	0.2209
oaSwellendam	oaPaarl	0.249	0.004	56.693	<0.01*	0.611	0.174	3.516	0.0206*
oePaarl	oaPaarl	-0.076	0.005	-15.26	<0.01*	0.036	0.202	0.179	1.000

oaSomerset West	oaRobertson	0.123	0.005	24.502	<0.01*	-0.733	0.156	-4.707	<0.01*
oaStellenbosch	oaRobertson	-0.086	0.005	-16.291	<0.01*	-0.344	0.134	-2.569	0.2826
oaSwellendam	oaRobertson	0.516	0.005	111.867	<0.01*	-0.196	0.136	-1.437	0.952
oeRobertson	oaRobertson	0.149	0.005	28.34	<0.01*	-1.125	0.195	-5.755	<0.01*
oaStellenbosch	oaSomerset West	-0.209	0.005	-40.699	<0.01*	0.389	0.163	2.389	0.397
oaSwellendam	oaSomerset West	0.393	0.004	88.512	<0.01*	0.538	0.164	3.271	0.046*
oeSomerset West	oaSomerset West	0.537	0.005	106.138	<0.01*	-0.199	0.237	-0.837	1.000
oaSwellendam	oaStellenbosch	0.602	0.005	126.983	<0.01*	0.149	0.144	1.034	0.997
oeStellenbosch	oaStellenbosch	0.225	0.005	41.811	<0.01*	-0.492	0.181	-2.718	0.205
oeSwellendam	oaSwellendam	-0.073	0.005	-15.49	<0.01*	-0.582	0.198	-2.942	0.119
oePaarl	oeClanwilliam	-0.474	0.005	-100.358	<0.01*	0.267	0.241	1.104	0.994
oeRobertson	oeClanwilliam	-0.516	0.005	-107.739	<0.01*	-0.087	0.260	-0.335	1.000
oeSomerset West	oeClanwilliam	-0.005	0.005	-1.14	0.9927	0.105	0.278	0.38	1.000
oeStellenbosch	oeClanwilliam	-0.525	0.005	-109.458	<0.01*	0.201	0.244	0.821	1.000
oeSwellendam	oeClanwilliam	-0.222	0.005	-46.429	<0.01*	0.260	0.256	1.013	0.997
oeRobertson	oePaarl	-0.041	0.005	-7.824	<0.01*	-0.354	0.227	-1.557	0.918

oeSomerset West	oePaarl	0.469	0.005	89.335	<0.01*	-0.161	0.248	-0.651	1.000
oeStellenbosch	oePaarl	-0.051	0.005	-9.657	<0.01*	-0.066	0.210	-0.314	1.000
oeSwellendam	oePaarl	0.252	0.005	47.685	<0.01*	-0.007	0.223	-0.032	1.000
oeSomerset West	oeRobertson	0.510	0.005	96.226	<0.01*	0.192	0.265	0.726	1.000
oeStellenbosch	oeRobertson	-0.010	0.005	-1.833	0.7971	0.288	0.230	1.249	0.983
oeSwellendam	oeRobertson	0.294	0.005	54.953	<0.01*	0.347	0.243	1.428	0.954
oeStellenbosch	oeSomerset West	-0.520	0.005	-97.836	<0.01*	0.095	0.250	0.381	1.000
oeSwellendam	oeSomerset West	-0.216	0.005	-40.873	<0.01*	0.154	0.262	0.589	1.000
oeSwellendam	oeStellenbosch	0.304	0.005	56.653	<0.01*	0.059	0.226	0.260	1.000

Table S5. Fungal abundance and core fungal abundance linear models' *post hoc* results of the interaction between both hosts and sites. Significant when $p < 0.05$ (*). Oa = *O. europaea* subsp. *cuspidata* and oe = *O. europaea* subsp. *europaea*

		Abundance				Abundance (Core)			
		Estimate	SE	z-value	Pr(>|z|)	Estimate	SE	z-value	Pr(>|z|)
oaPaarl	oaClanwilliam	0.239	0.098	2.442	0.360	1.081	0.038	28.224	0.001*
oaRobertson	oaClanwilliam	0.978	0.084	11.667	<0.01*	1.704	0.043	40.079	0.001*
oaSomerset West	oaClanwilliam	0.116	0.098	1.176	0.990	1.642	0.038	43.18	0.001*
oaStellenbosch	oaClanwilliam	0.255	0.095	2.683	0.222	1.729	0.038	45.49	0.001*
oaSwellendam	oaClanwilliam	0.748	0.087	8.624	<0.01*	1.897	0.043	44.635	0.001*
oeClanwilliam	oaClanwilliam	-0.364	0.119	-3.043	0.090	2.003	0.012	167.088	0.001*
oaRobertson	oaPaarl	0.739	0.080	9.246	<0.01*	0.624	0.037	16.893	0.001*
oaSomerset West	oaPaarl	-0.123	0.095	-1.3	0.977	0.561	0.017	33.836	0.001*
oaStellenbosch	oaPaarl	0.016	0.092	0.179	1	0.648	0.007	87.712	0.001*
oaSwellendam	oaPaarl	0.509	0.083	6.135	<0.01*	0.817	0.037	22.134	0.001*
oePaarl	oaPaarl	0.048	0.096	0.504	1	0.539	0.008	67.661	0.001*

oaSomerset West	oaRobertson	-0.862	0.080	-10.72	<0.01*	-0.062	0.037	-1.699	0.777
oaStellenbosch	oaRobertson	-0.722	0.077	-9.427	<0.01*	0.025	0.037	0.671	1.000
oaSwellendam	oaRobertson	-0.230	0.066	-3.492	0.023*	0.193	0.006	33.126	0.001*
oeRobertson	oaRobertson	-1.398	0.108	-12.96	<0.01*	-0.104	0.007	-15.949	0.001*
oaStellenbosch	oaSomerset West	0.140	0.092	1.516	0.931	0.087	0.016	5.455	0.001*
oaSwellendam	oaSomerset West	0.632	0.083	7.578	<0.01*	0.255	0.037	6.97	0.001*
oeSomerset West	oaSomerset West	-0.270	0.128	-2.103	0.604	0.508	0.006	80.433	0.001*
oaSwellendam	oaStellenbosch	0.492	0.080	6.171	<0.01*	0.168	0.037	4.602	0.001*
oeStellenbosch	oaStellenbosch	-0.022	0.095	-0.232	1	-0.012	0.007	-1.851	0.670
oeSwellendam	oaSwellendam	-0.815	0.107	-7.594	<0.01*	0.085	0.006	13.626	0.001*
oePaarl	oeClanwilliam	0.651	0.118	5.51	<0.01*	-0.383	0.037	-10.416	0.001*
oeRobertson	oeClanwilliam	-0.057	0.137	-0.412	1	-0.402	0.041	-9.703	0.001*
oeSomerset West	oeClanwilliam	0.209	0.145	1.443	0.951	0.148	0.037	4.015	0.002*
oeStellenbosch	oeClanwilliam	0.597	0.119	5.005	<0.01*	-0.286	0.036	-7.848	0.001*
oeSwellendam	oeClanwilliam	0.297	0.135	2.196	0.534	-0.021	0.041	-0.496	1.000
oeRobertson	oePaarl	-0.708	0.120	-5.878	<0.01*	-0.019	0.037	-0.506	1.000

oeSomerset West	oePaarl	-0.442	0.129	-3.418	0.028*	0.531	0.016	32.558	0.001*
oeStellenbosch	oePaarl	-0.054	0.099	-0.545	1	0.098	0.007	13.577	0.001*
oeSwellendam	oePaarl	-0.354	0.118	-3.007	0.100	0.363	0.037	9.856	0.001*
oeSomerset West	oeRobertson	0.266	0.147	1.81	0.801	0.549	0.037	14.938	0.001*
oeStellenbosch	oeRobertson	0.654	0.121	5.379	<0.01*	0.116	0.036	3.187	0.033*
oeSwellendam	oeRobertson	0.353	0.137	2.578	0.278	0.381	0.007	55.666	0.001*
oeStellenbosch	oeSomerset West	0.387	0.130	2.975	0.107	-0.433	0.014	-30.012	0.001*
oeSwellendam	oeSomerset West	0.087	0.145	0.603	1	-0.168	0.037	-4.574	0.001*
oeSwellendam	oeStellenbosch	-0.300	0.119	-2.524	0.309	0.265	0.036	7.282	0.001*

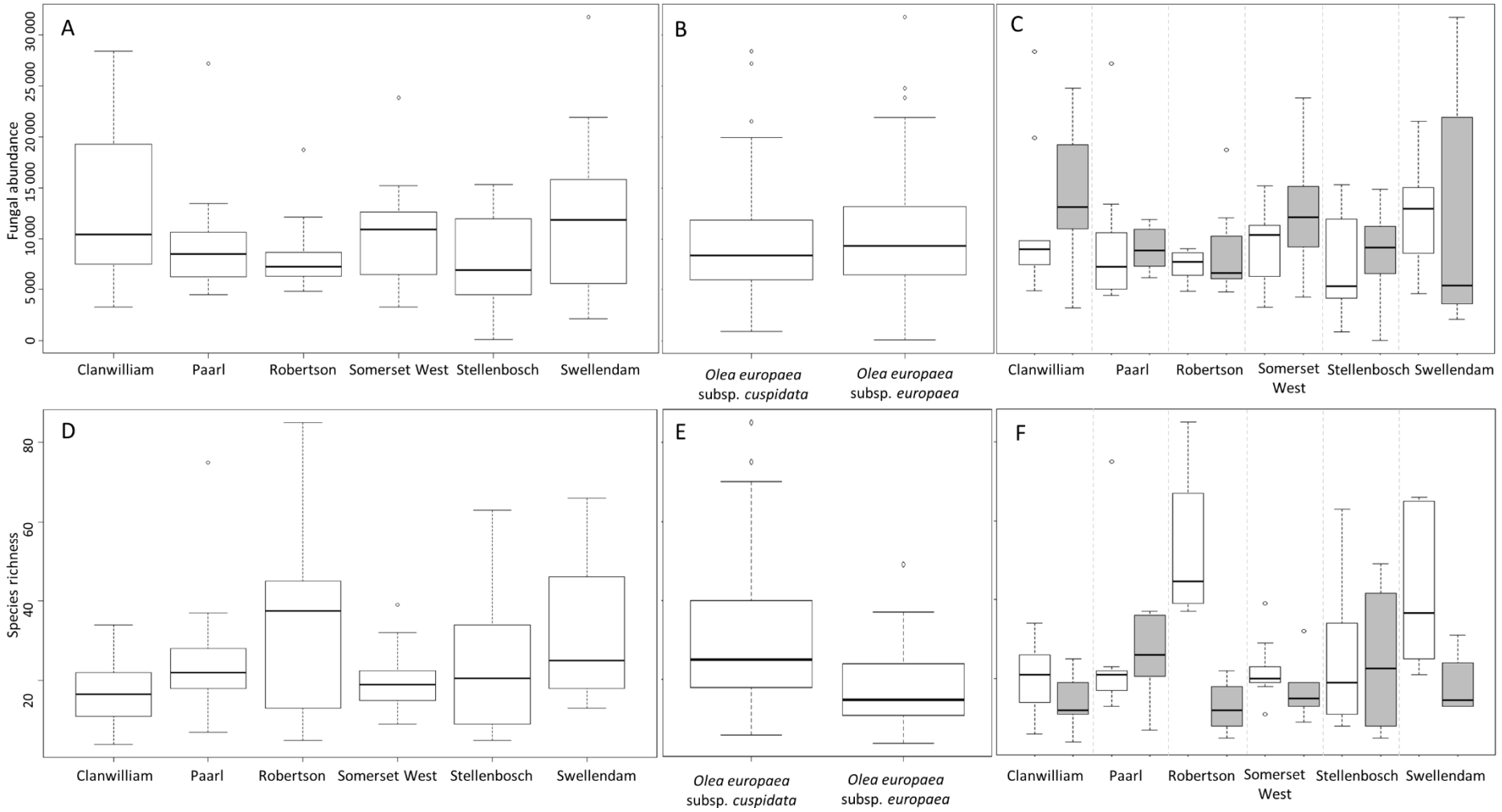

Fig. S1: Box and whisker plots of fungal abundance (top row) and richness (bottom row) within sites, hosts and their interactions, respectively. In the interaction plots *Olea europaea* subsp. *cuspidata* is white (not shaded) while *Olea europaea* subsp. *europaea* is shaded in grey. n = 102.

BETA-DIVERSITY

Table S6. PERMANOVA *post hoc* tests of reduced complete fungal assemblages and core fungal assemblages. Pairwise comparisons of fungal assemblages between sites and within sites (between hosts) are based on the balanced and reduced dataset (n =60). All results with asterisk (*) indicate comparisons significant at p<0.05. oe = *Olea europaea* subsp. *europaea*, oa = *Olea europaea* subsp. *cuspidata*

		Jaccard			Jaccard (core)			Bray-Curtis			Bray-Curtis (core)		
Groups		Site	Oe	Oa	Site	Oe	Oa	Site	Oe	Oa	Site	Oe	Oa
Clanwilliam	Paarl	0.001*	0.013*	0.011*	0.020*	0.228	0.011*	0.001*	0.035*	0.008*	0.029*	0.146*	0.032*
Clanwilliam	Robertson	0.001*	0.019*	0.010*	0.002*	0.011*	0.005*	0.001*	0.008*	0.009*	0.003*	0.032*	0.008*
Clanwilliam	Somerset West	0.001*	0.010*	0.008*	0.001*	0.023*	0.011*	0.001*	0.040*	0.010*	0.001*	0.048	0.008*
Clanwilliam	Stellenbosch	0.001*	0.011*	0.013*	0.001*	0.076	0.005*	0.001*	0.008*	0.009*	0.002*	0.059	0.005*
Clanwilliam	Swellendam	0.001*	0.011*	0.008*	0.001*	0.024*	0.01*	0.001*	0.015*	0.013*	0.001*	0.016*	0.011*
Paarl	Robertson	0.001*	0.006*	0.015*	0.004*	0.019*	0.029*	0.007*	0.032*	0.016*	0.009*	0.036*	0.038*

Paarl	Somerset West	0.014*	0.042*	0.019*	0.034*	0.164	0.043*	0.027*	0.126	0.025*	0.075	0.14	0.134
Paarl	Stellenbosch	0.176	0.272	0.048*	0.177	0.554	0.025*	0.074*	0.649	0.013*	0.211	0.711	0.018*
Paarl	Swellendam	0.001*	0.021*	0.007*	0.004*	0.081	0.007*	0.002*	0.08	0.008*	0.005*	0.105	0.012*
Robertson	Somerset West	0.001*	0.009*	0.003*	0.004*	0.034*	0.023*	0.003*	0.068	0.007*	0.004*	0.082	0.008*
Robertson	Stellenbosch	0.002*	0.007*	0.042*	0.068	0.04	0.759	0.018*	0.026*	0.154	0.159	0.07	0.586
Robertson	Swellendam	0.095	0.066	0.192	0.065	0.065	0.386	0.342	0.213	0.355	0.207	0.145	0.661
Somerset West	Stellenbosch	0.021*	0.058	0.374	0.082	0.418	0.015*	0.016*	0.162	0.044*	0.066	0.404	0.023*
Somerset West	Swellendam	0.002*	0.016*	0.006*	0.001*	0.076	0.009*	0.001*	0.021*	0.009*	0.001*	0.166	0.011*
Stellenbosch	Swellendam	0.001*	0.008*	0.057	0.026*	0.040	0.269	0.003*	0.014*	0.027*	0.017*	0.06	0.062

	Jaccard		Jaccard (core)			Bray-Curtis			Bray-Curtis (core)			

	Groups	t	*p* (perm)	t	*p* (perm)	t	*p* (perm)	t	*p* (perm)
Clanwilliam	oa, oe	1.3936	0.009*	1.5515	0.031*	1.5363	0.032*	1.5515	0.031*
Paarl	oa, oe	1.2907	0.008*	2.2396	0.008*	1.5915	0.012*	2.3403	0.011*
Robertson	oa, oe	1.6295	0.01*	3.233	0.013*	1.7889	0.018*	2.6175	0.008*
Somerset West	oa, oe	1.4785	0.006*	2.7817	0.010*	1.9933	0.007*	2.8206	0.011*
Stellenbosch	oa, oe	1.3739	0.004*	2.3744	0.007*	1.4929	0.006*	2.0853	0.009*
Swellendam	oa, oe	1.7779	0.009*	4.934	0.010*	2.1835	0.008*	3.4439	0.006*

Table S7. PERMDISP (B2). *Post hoc* pairwise comparisons within the significant factors (Table 5). Comparisons between sites, between hosts and between the interaction of site and host identity (oa = *O. europaea* subsp. *cuspidata* and oe = *O. europaea* subsp. *europaea*). The average distances around the centroid for the significant main tests are also presented. Results are considered significant when $p < 0.05$.

Site				Site and host interaction			
Groups		t	*p*(perm)	Groups		t	*p*(perm)
Clanwilliam	Paarl	0.637	0.521	oeClanwilliam	oePaarl	1.048	0.339
Clanwilliam	Robertson	0.924	0.307	oeClanwilliam	oeRobertson	2.702	7.1E-2
Clanwilliam	Somerset West	0.875	0.335	oeClanwilliam	oeSomerset West	1.626	0.231
Clanwilliam	Stellenbosch	0.49	0.582	oeClanwilliam	oeStellenbosch	0.535	0.578
Clanwilliam	Swellendam	2.63	0.005*	oeClanwilliam	oeSwellendam	4.257	2.1E-2*
Paarl	Robertson	1.302	0.194	oeClanwilliam	oaClanwilliam	1.408	0.253
Paarl	Somerset West	0.103	0.906	oePaarl	oeRobertson	2.445	8.9E-2
Paarl	Stellenbosch	0.183	0.865	oePaarl	oeSomerset West	1.223	0.359
Paarl	Swellendam	2.64	0.011*	oePaarl	oeStellenbosch	0.326	0.87

Robertson	Somerset West	1.568	0.08
Robertson	Stellenbosch	1.231	0.197
Robertson	Swellendam	1.357	0.106
Somerset West	Stellenbosch	0.321	0.683
Somerset West	Swellendam	3.12	0.003*
Stellenbosch	Swellendam	2.719	0.008*

		t	p(perm)
African olive	European olive	2.291	0.052

Group	Size	Ave	SE
Hosts			
oe	30	53.664	2.267

oePaarl	oeSwellendam	4.497	1.1E-2*
oePaarl	oaPaarl	3.076	5.5E-2
oeRobertson	oeSomerset West	0.698	0.592
oeRobertson	oeStellenbosch	2.285	9.5E-2
oeRobertson	oeSwellendam	0.765	0.494
oeRobertson	oaRobertson	0.619	0.661
oeSomerset West	oeStellenbosch	1.253	0.351
oeSomerset West	oeSwellendam	1.473	0.271
oeSomerset West	oaSomerset West	0.714	0.583
oeStellenbosch	oaStellenbosch	3.501	7E-3*
oeSwellendam	oaSwellendam	2.774	7.5E-2
oaClanwilliam	oaPaarl	0.905	0.499
oaClanwilliam	oaRobertson	1.527	0.295

oa	30	46.019	2.449		oaSomerset		
				oaClanwilliam	West	1.302	0.29
Sites				oaClanwilliam	oaStellenbosch	1.653	0.262
Clanwilliam	10	60.673	0.652	oaClanwilliam	oaSwellendam	4.604	4E-3*
Paarl	10	61.472	1.070	oaPaarl	oaRobertson	1.057	0.476
					oaSomerset		
Robertson	10	59.608	0.951	oaPaarl	West	0.535	0.576
Somerset West	10	61.613	0.854	oaPaarl	oaStellenbosch	1.002	0.424
Stellenbosch	10	61.216	0.895	oaPaarl	oaSwellendam	4.984	6E-3*
					oaSomerset		
Swellendam	10	57.893	0.832	oaRobertson	West	0.785	0.615
Interactions				oaRobertson	oaStellenbosch	0.574	0.729
oeClanwilliam	5	54.394	3.571	oaRobertson	oaSwellendam	1.527	0.398
oePaarl	5	50.444	1.206	oaSomerset			
				West	oaStellenbosch	0.445	0.698
oeRobertson	5	36.586	5.539	oaSomerset			
				West	oaSwellendam	4.480	8E-3*

oeSomerset	5	42.491	6.392				
West				oaStellenbosch	oaSwellendam	4.238	8E-3*
oeStellenbosch	5	51.68	3.598				
oeSwellendam	5	31.323	4.077				
oaClanwilliam	5	45.424	5.275				
oaPaarl	5	39.823	3.235				
oaRobertson	5	30.406	8.302				
oaSomerset	5	37.388	3.203				
West							
oaStellenbosch	5	35.459	2.92				
oaSwellendam	5	16.757	3.31				

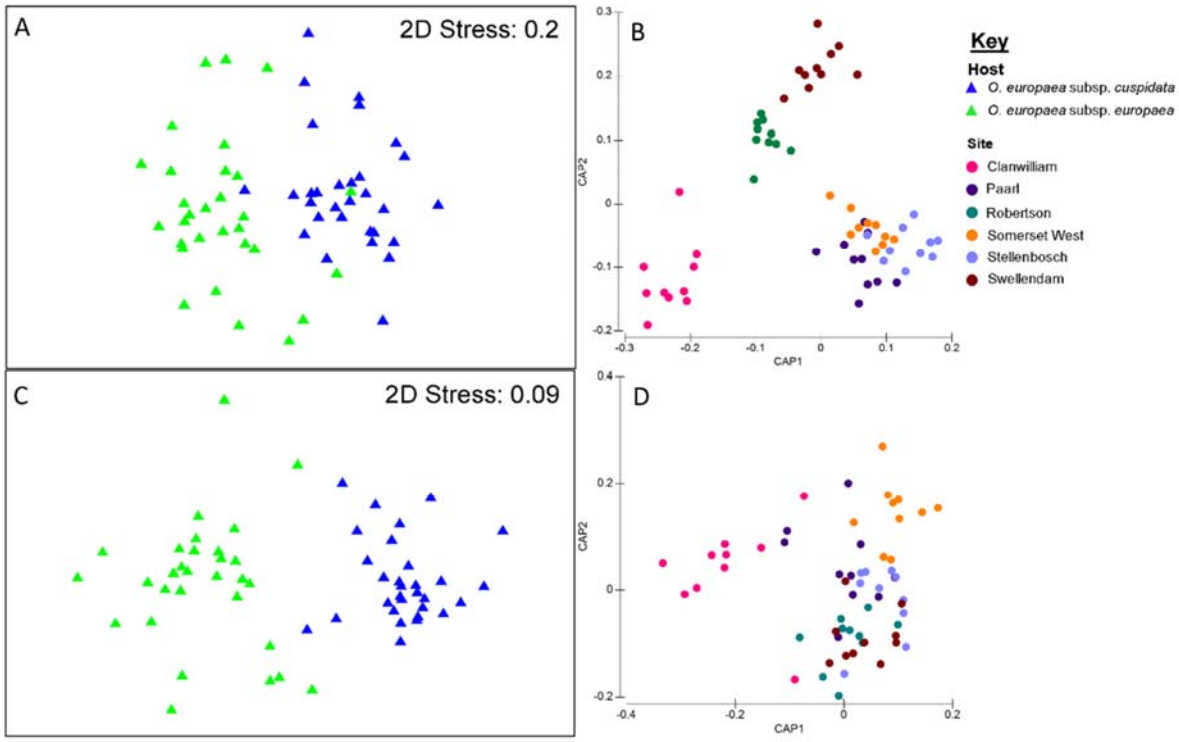

Fig S2: Canonical analysis of principal coordinates (CAP) and non-metric multidimensional scaling (nMDS) plots based on incident data (Jaccard resemblance) for fungal endophyte assemblages sequenced from *O. europaea* subsp. *cuspidata* and *O. europaea* subsp. *europaea* from six different sites. Plots reflect the grouping of all endophytes (top) and only that of the core (bottom) within olive twigs based on host (nMDS, left) and site (CAP, right). Plots were constructed based on the reduced and balanced sample size, n = 60.

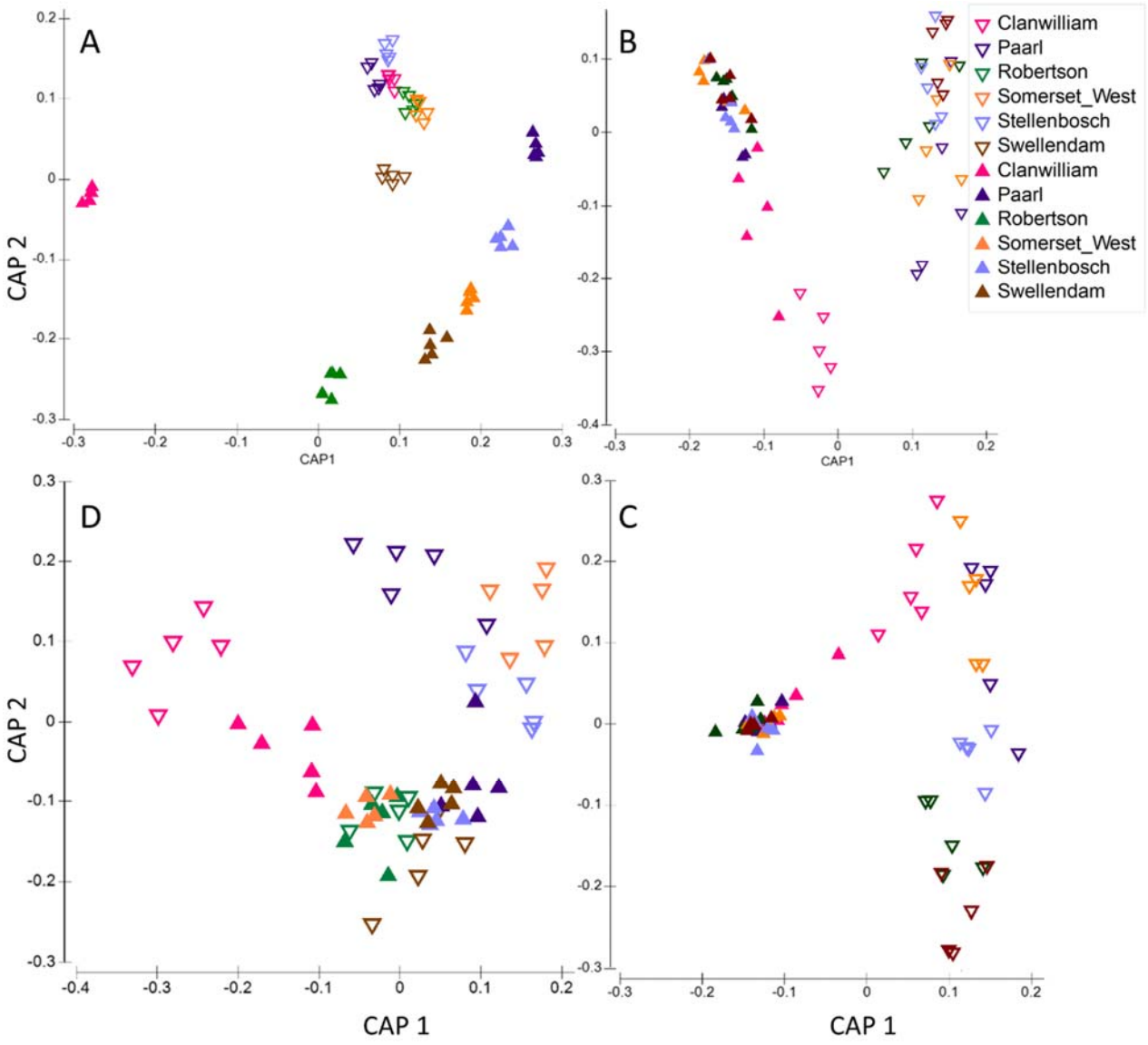

Fig. S3: Canonical analysis of principal coordinates (CAP) of the site and host interaction. Ordination plots of the interaction between host (*Olea europaea* subsp. *europaea*, *Olea europaea* subsp. *cuspidata*) and site based on full fungal incident data (top left, core fungal incident data (top right), full fungal abundance (bottom left), core fungal abundance (bottom right). Plots are based on the balanced design, n = 60.

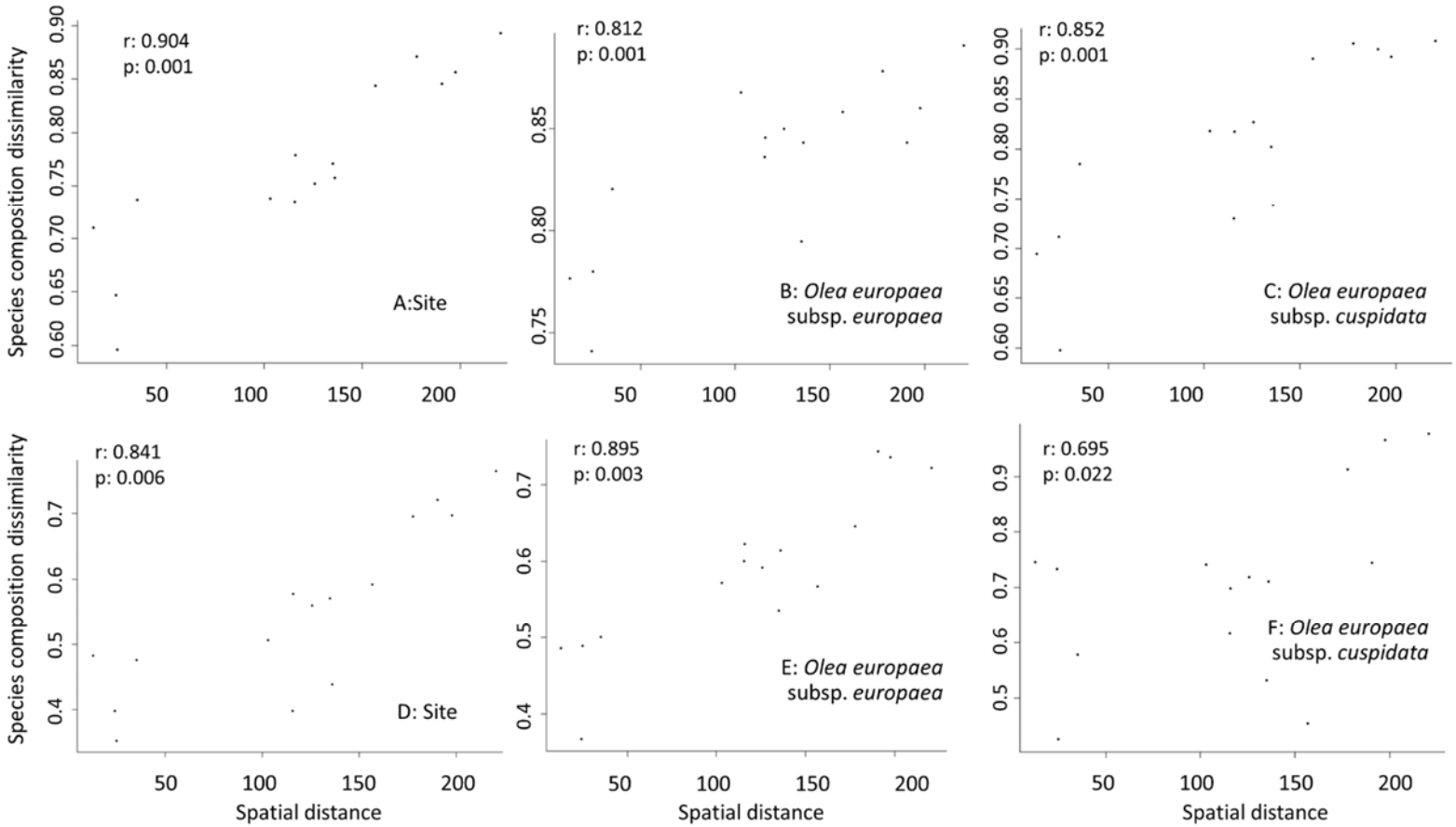

Fig. S4: Correlations between geographic distance (Euclidean distance-based matrix) and fungal endophyte assemblage compositional differences based on Jaccard dissimilarity matrices (presence-absence data). Plots A, B and C are based on full fungal assemblages, while D, E and F are based on core fungal assemblages. Correlations are meaningful at $r > 0.5$ and significant when $p < 0.05$.