

ON-LINE SUPPLEMENTARY MATERIAL

On-line Suppl. Tab. 1. Geographic coordinates, altitudes, and bioclimatic variables for seven observed *Fraxinus excelsior* populations. Bioclimatic variables: BIO1 (Annual Mean Temperature); BIO2 (Mean Diurnal Range (Mean of monthly (max temp - min temp))); BIO3 (Isothermality (BIO2/BIO7) ($\times 100$)); BIO4 (Temperature Seasonality (standard deviation $\times 100$)); BIO5 (Max Temperature of Warmest Month); BIO6 (Min Temperature of Coldest Month); BIO7 (Temperature Annual Range (BIO5-BIO6)); BIO8 (Mean Temperature of Wettest Quarter); BIO9 (Mean Temperature of Driest Quarter); BIO10 (Mean Temperature of Warmest Quarter); BIO11 (Mean Temperature of Coldest Quarter); BIO12 (Annual Precipitation); BIO13 (Precipitation of Wettest Month); BIO14 (Precipitation of Driest Month); BIO15 (Precipitation Seasonality (Coefficient of Variation)); BIO16 (Precipitation of Wettest Quarter); BIO17 (Precipitation of Driest Quarter); BIO18 (Precipitation of Warmest Quarter); BIO19 (Precipitation of Coldest Quarter). Population acronyms: P1–Žumberak; P2–Crni Lug; P3–Delnice; P4–Vrbovsko; P5–Brinje; P6–Prozor; P7–Perušić.

Pop. ID	Latitude	Longitude	Alt.	Bioclimatic variables (BIO)																		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
P1	45.806397	15.498413	735	8.28	8.98	32.55	686.85	21.2	-6.4	27.6	16.75	1.12	16.75	-0.12	1261	136	62	20.84	366	223	366	228
P2	45.427192	14.707854	699	7.65	8.99	33.18	683.55	20.7	-6.4	27.1	8.52	0.32	16.17	-0.65	1492	175	93	20.69	475	300	349	318
P3	45.399978	14.821221	727	7.28	9.21	34.62	660.63	20.1	-6.5	26.6	7.95	0.18	15.53	-0.68	1518	177	95	20.40	481	307	350	326
P4	45.380998	15.042382	554	8.37	9.92	35.67	668.38	21.6	-6.2	27.8	8.72	1.28	16.72	0.32	1467	166	86	20.19	464	284	351	304
P5	45.012709	15.152317	535	8.78	10.69	35.64	722.37	23.0	-7.0	30.0	9.22	17.72	17.72	-0.18	1382	169	78	23.92	462	282	282	320
P6	44.846530	15.267748	476	9.48	10.27	33.77	737.65	23.6	-6.8	30.4	9.80	18.70	18.70	0.37	1293	159	69	25.00	438	251	251	307
P7	44.654396	15.420334	554	8.85	11.14	35.94	733.50	23.6	-7.4	31.0	4.38	18.02	18.02	-0.15	1239	160	60	27.53	428	227	227	310

On-line Suppl. Tab. 2. Pearson's correlation coefficients between analysed leaf traits. TL–terminal leaflet; LL–lateral leaflet. Morphometric traits: LA–leaflet area; LL–leaflet length; MLW–maximum leaflet width; PMLW–leaflet length, measured from its base to the point of maximum width; LW1–leaflet width at 50% of its length; LW2–leaflet width at 90% of its length; LA1–angle enclosed by the main leaflet vein and point on its edge, at 10% of its length; LA2–angle enclosed by the main leaflet vein and point on its edge, at 25% of its length; PL–petiole length; RL–rachis length. Statistically significant correlations are highlighted in red ($P < 0.05$).

	LL- LA	LL- LL	LL- MLW	LL- PMLW	LL- LW1	LL- LW2	LL- LA1	LL- LA2	TL- LA	TL- LL	TL- MLW	TL- PMLW	TL- LW1	TL- LW2	TL- LA1	TL- LA2	TL- PL	RL	PL
LL-LA	1.00	0.82	0.92	0.74	0.89	0.46	0.07	0.16	0.79	0.67	0.70	0.70	0.70	0.30	0.22	0.21	0.39	0.30	0.17
LL-LL	0.82	1.00	0.57	0.83	0.52	0.10	-0.30	-0.38	0.61	0.84	0.38	0.76	0.38	-0.01	-0.12	-0.20	0.20	0.20	0.27
LL-MLW	0.92	0.57	1.00	0.57	0.99	0.56	0.27	0.50	0.77	0.45	0.81	0.55	0.81	0.44	0.40	0.45	0.48	0.32	0.09
LL-PMLW	0.74	0.83	0.57	1.00	0.60	0.34	-0.49	-0.36	0.58	0.69	0.40	0.78	0.39	0.24	-0.21	-0.20	0.25	0.11	0.11
LL-LW1	0.89	0.52	0.99	0.60	1.00	0.64	0.21	0.50	0.74	0.40	0.80	0.55	0.80	0.50	0.35	0.43	0.47	0.31	0.07
LL-LW2	0.46	0.10	0.56	0.34	0.64	1.00	0.12	0.44	0.44	0.11	0.51	0.35	0.49	0.71	0.16	0.26	0.27	0.25	0.06
LL-LA1	0.07	-0.30	0.27	-0.49	0.21	0.12	1.00	0.78	0.09	-0.26	0.24	-0.28	0.26	0.03	0.75	0.57	0.24	0.26	0.02
LL-LA2	0.16	-0.38	0.50	-0.36	0.50	0.44	0.78	1.00	0.22	-0.33	0.50	-0.22	0.50	0.40	0.66	0.74	0.32	0.22	-0.07
TL-LA	0.79	0.61	0.77	0.58	0.74	0.44	0.09	0.22	1.00	0.78	0.92	0.76	0.91	0.55	0.41	0.45	0.63	0.08	0.09
TL-LL	0.67	0.84	0.45	0.69	0.40	0.11	-0.26	-0.33	0.78	1.00	0.51	0.89	0.51	0.16	-0.02	-0.10	0.32	0.02	0.20
TL-MLW	0.70	0.38	0.81	0.40	0.80	0.51	0.24	0.50	0.92	0.51	1.00	0.55	1.00	0.62	0.53	0.66	0.66	0.17	0.02
TL-PMLW	0.70	0.76	0.55	0.78	0.55	0.35	-0.28	-0.22	0.76	0.89	0.55	1.00	0.53	0.37	-0.09	-0.16	0.34	0.07	0.15
TL-LW1	0.70	0.38	0.81	0.39	0.80	0.49	0.26	0.50	0.91	0.51	1.00	0.53	1.00	0.59	0.54	0.67	0.66	0.18	0.04
TL-LW2	0.30	-0.01	0.44	0.24	0.50	0.71	0.03	0.40	0.55	0.16	0.62	0.37	0.59	1.00	0.14	0.38	0.39	-0.04	0.02
TL-LA1	0.22	-0.12	0.40	-0.21	0.35	0.16	0.75	0.66	0.41	-0.02	0.53	-0.09	0.54	0.14	1.00	0.84	0.60	0.17	-0.07
TL-LA2	0.21	-0.20	0.45	-0.20	0.43	0.26	0.57	0.74	0.45	-0.10	0.66	-0.16	0.67	0.38	0.84	1.00	0.57	0.06	-0.10
TL-PL	0.39	0.20	0.48	0.25	0.47	0.27	0.24	0.32	0.63	0.32	0.66	0.34	0.66	0.39	0.60	0.57	1.00	0.10	-0.03
RL	0.30	0.20	0.32	0.11	0.31	0.25	0.26	0.22	0.08	0.02	0.17	0.07	0.18	-0.04	0.17	0.06	0.10	1.00	0.21
PL	0.17	0.27	0.09	0.11	0.07	0.06	0.02	-0.07	0.09	0.20	0.02	0.15	0.04	0.02	-0.07	-0.10	-0.03	0.21	1.00

On-line Suppl. Tab. 3. Results of the Fisher's LSD test. Acronyms of populations: P1–Žumberak; P2–Crni Lug; P3–Delnice; P4–Vrbovsko; P5–Brinje; P6–Prozor; P7–Perušić. TL–terminal leaflet; LL–lateral leaflet. Morphometric traits: LA–leaflet area; LL–leaflet length; MLW–maximum leaflet width; PMLW–leaflet length, measured from its base to the point of maximum width; LW1–leaflet width at 50% of its length; LW2–leaflet width at 90% of its length; LA1–angle enclosed by the main leaflet vein and point on its edge, at 10% of its length; LA2–angle enclosed by the main leaflet vein and point on its edge, at 25% of its length; PL–petiole length; RL–rachis length.

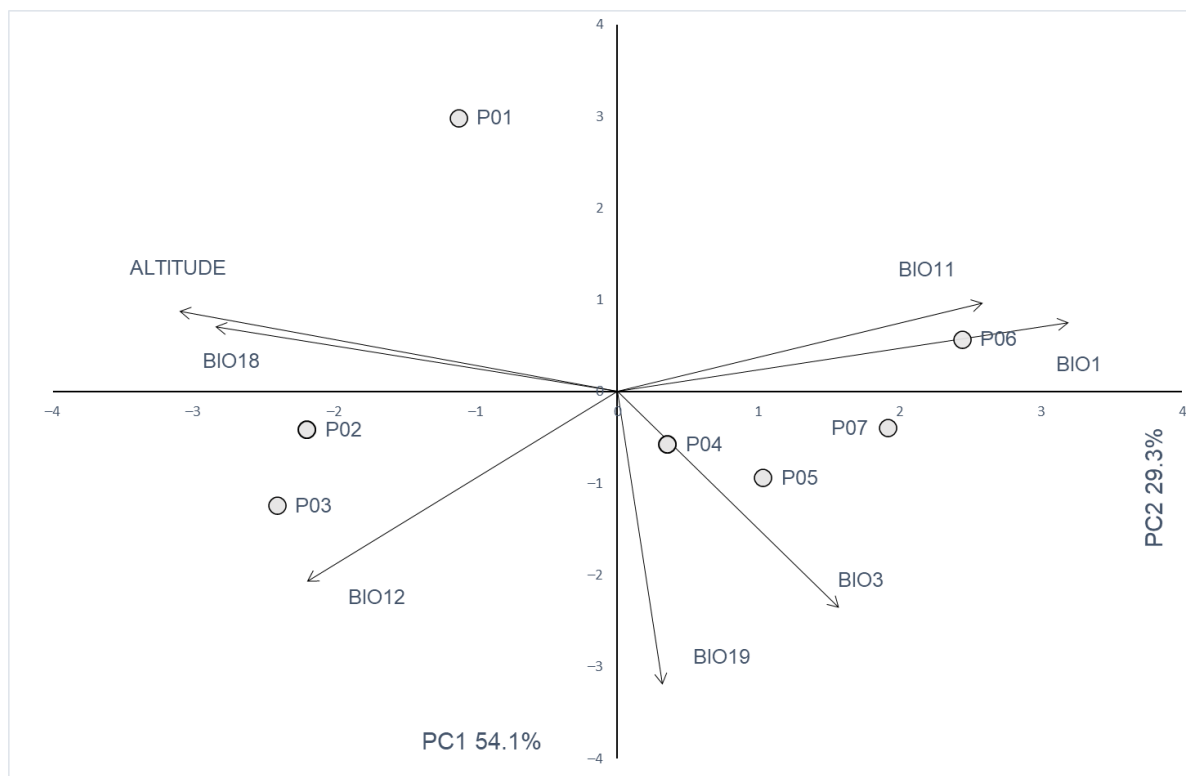
	P1	P2	P3	P4	P5	P6
P2	LL-LA10; TL-LA10; TL-PL					
P3	LL-LA10; LL-LA25; TL-LA10; TL-LA25; TL-PL					
P4	LL-LA10; TL-LA; TL- MPW; TL-LW50; TL- LA10; TL-LA25; TL- PL	TL-MPW; TL-LW50; TL-PL	TL-PL			
P5	LL-LA25; RL; TL-LL	LL-MPW; LL-LW50; LL-LA10; LL-LA25; RL; TL-LA10; TL- LA25	LL-MPW; LL-LW50; LL-LA10; LL-LA25; RL; TL-MPW; TL- LW50; TL-LA10; TL- LA25; TL-PL	LL-MPW; LL-LW50; LL-LA10; LL-LA25; RL; TL- MPW; TL-LW50; TL- LA10; TL-LA25; TL- PL		
P6	LL-LA10	LL-MPW; LL-LW50; LL-LA10; TL-LA; TL- MPW; TL-LW50; TL- LA10; TL-LA25; TL- PL	LL-MPW; LL-LW50; LL-LA10; TL-LA; TL- MPW; TL-LW50; TL- LA10; TL-LA25; TL- PL	LL-MPW; LL-LW50; TL-LA; TL-LL; TL- MPW; TL-LW50; TL- LA10; TL-LA25; TL- PL	LL-LA10; LL-LA25; RL; TL-LL;	
P7	RL; TL-PL	LL-LA10; RL; TL- LA10	LL-LA10; RL; TL- LA10	LL-LA10; RL; TL- LA10; TL-PL	LL-LA25; TL-LA25	LL-LA10; TL-LA; TL- MPW; TL-LW50; TL- LA25; TL-PL

On-line Suppl. Tab. 4. Results of the stepwise discriminant analyses for studied morphometric traits. TL–terminal leaflet; LL–lateral leaflet. LA1–angle enclosed by the main leaflet vein and point on its edge, at 10% of its length; LA2–angle enclosed by the main leaflet vein and point on its edge, at 25% of its length; PL–petiole length; RL–rachis length; LL–leaflet length; LA–leaflet area.

Trait	Wilks'	Partial	F-remove	P-value
TL-LA1	0.053	0.559	7.358	0.000
TL-LA2	0.053	0.564	7.225	0.000
TL-PL	0.052	0.566	7.171	0.000
LL-LA1	0.045	0.657	4.881	0.000
RL	0.038	0.779	2.646	0.025
TL-LL	0.033	0.897	1.072	0.390
TL-LA	0.033	0.909	0.935	0.477
LL-LA2	0.032	0.913	0.885	0.512

On-line Suppl. Tab. 5. Pearson correlation coefficients between altitude and six bioclimatic variables and scores of the first four principal components. Bioclimatic variables: BIO1–annual mean temperature; BIO3–isothermality (BIO2/BIO7) ($\times 100$); BIO11–mean temperature of coldest quarter; BIO12–annual precipitation; BIO18–precipitation of warmest quarter; BIO19–precipitation of coldest quarter.

Environmental variable	PC-principal component		
	PC1	PC2	PC3
Altitude	-0.932	0.264	-0.194
BIO1	0.959	0.226	0.019
BIO3	0.471	-0.706	0.076
BIO11	0.776	0.289	0.550
BIO12	-0.660	-0.620	0.388
BIO18	-0.854	0.213	0.464
BIO19	0.095	-0.958	-0.087
Eigenvalue	3.79	2.05	0.72
% Total	54.09	29.28	10.28
% Cumulative	54.09	83.37	93.65



On-line Suppl. Fig. 1. Biplot of the principal component analysis based on seven environmental variables. Acronyms of populations: P1–Žumberak; P2–Crni Lug; P3–Delnice; P4–Vrbovsko; P5–Brinje; P6–Prozor; P7–Perušić. Bioclimatic variables: BIO1–annual mean temperature; BIO3–isothermality (BIO2/BIO7) ($\times 100$); BIO11–mean temperature of coldest quarter; BIO12–annual precipitation; BIO18–precipitation of warmest quarter; BIO19–precipitation of coldest quarter.

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