On-line Suppl. Tab. 1. Characteristics of the 24 oak collection stands (populations; Pop). Administrative Province: BA – Bari; BAT – Barletta-Andria-Trani; BR – Brindisi; FG – Foggia; LE – Lecce; TA – Taranto.

Pop code	Municipality (Province)	(Alt,m a.s.l.)	Substrate	Bioclimate	Physiographic units
Pop01	Acquav. delle Fonti (BA)	200	Limestone	MesoMedit. dry	Murgia plateau (Mesole wood)
Pop02	Deliceto (FG)	640	Clavey marlstone	MesoTemp. humid/sub-humid	Daunia sub-Apenn village surround.)
Pop03	Spinazzola (BAT)	600	Conglomerates	MesoMedit. humid/sub-humid	Murgia plateau (Acquatetta wood)
Pop04	Cagnano Varano (FG)	520	Limestone	MesoMedit. humid/sub-humid	W-Gargano (l'Agrifoglio wood)
Pop05	San Marco in Lamis (FG)	880	Limestone	SupraTemp. humid/sub-humid	W-Gargano (Chiancate)
Pop06	Deliceto (FG)	550	Clavey marlstone	MesoTemp. humid/sub-humid	Daunia sub-Apenn (Consolazione)
Pop07	Deliceto (FG)	560	Clavey marlstone	MesoTemp. humid/sub-humid	Daunia sub-Apenn (Deliceto wood)
Pop08	Accadia (FG)	670	Clavey marlstone	MesoTemp. humid/sub-humid	Daunia sub-Apenn (Difesa Coste)
Pop09	Gravina in Puglia (BA)	380	Conglomerates	MesoMedit. humid/sub-humid	Murgia plateau (Difesa grande)
Pop10	Laterza (TA)	420	Limestone	MesoMedit. humid/sub-humid	Murgia plateau (Grottaturge)
Pop11	Foggia (FG)	75	Fluvial deposits	MesoMedit. dry	Tavoliere (Incoronata wood)
Pop12	Ruvo di Puglia (BA)	320	Limestone	MesoMedit. dry	Murgia plateau (Jazzo Pagliara)
Pop13	Laterza (TA)	305	Calcarenites	MesoMedit. humid/sub-humid	Murgia plateau (Masseria Tafuri)
Pop14	Castellaneta Marina (TA)	40	Clayey-sandy	ThermoMedit dry	Murgia plateau (Lama del Lato)
Pop15	Palmariggi (LE)	40	Calcarenites	ThermoMedit dry	Salento (Montevergine Sanct.)
Pop16	Santeramo in Colle (BA)	500	Limestone	MesoMedit. humid/sub-humid	Murgia plateau (Parata wood)
Pop17	Martina Franca (TA)	460	Limestone	MesoMedit. humid/sub-humid	Murgia plateau (Bosco Pianelle)
Pop18	Torritto (BA)	420	Limestone	MesoMedit. dry	Murgia plateau (Quasano wood)
Pop19	Santeramo in Colle (BA)	490	Limestone	MesoTemp. humid/sub-humid	Murgia plateau (Santeramo)
Pop20	Laterza (TA)	340	Limestone	MesoMedit. humid/sub-humid	Murgia plateau (Selva S. Vito)
Pop21	Vico del Gargano (FG)	240	Limestone	MesoMedit. dry	E-Gargano (Caritate)
Pop22	Vico del Gargano (FG)	520	Limestone	MesoTemp. humid/sub-humid	E-Gargano (Foresta Umbra)
Pop23	Brindisi (BR)	40	Limestone	ThermoMedit dry	Salento (del Compare wood)
Pop24	Santeramo in Colle (BA)	470	Limestone	MesoTemp. humid/sub-humid	Murgia plateau (SanteramoCassano)

On-line Suppl. Tab. 2. List of the samples bearing one or more Private Alleles per locus (PIE020, PIE223, PIE152, PIE242, PIE243, PIE267, PIE239) The numbers reported in the table make reference to the size of fragments in base pars. When this fragment size is reported twice with the same value in the same locus it means that the individual is homozygote for that allele.

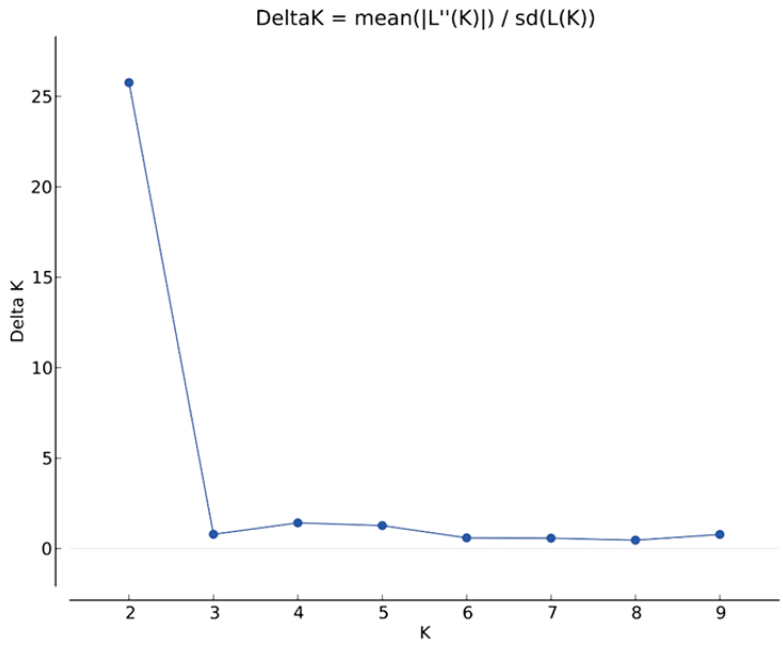
Population	Sample	PIE020	PIE223	PIE152	PIE242	PIE243	PIE267	PIE239
Pop05	15		234					
Pop12	6				102			
Pop13	4							71
Pop13	5							69
Pop14	11			260				
Pop16	5					206		
Pop18	1						106	
Pop18	10						106	
Pop20	17					224 224		
Pop21	15				132 132			
Pop24	5	115 115						
Pop24	11	113						

On-line Suppl. Tab. 3. Pairwise matrix showing the genetic differentiation coefficient between every two populations. Probability based on 1000 permutations.
P-values obtained after 231000 permutations. Significance level after Bonferroni correction: 0.000216.
** = significance at the 1% nominal level.
* = significance at the 5% nominal level.

	Pop01	Pop02	Pop03	Pop04	Pop05	Pop06	Pop07	Pop08	Pop09	Pop10	Pop11	Pop12	Pop13	Pop14	Pop15	Pop16	Pop17	Pop18	Pop19	Pop20	Pop21
Pop02	0.0277																				
Pop03	0.0436	0.0181																			
Pop04	0.0042	0.0002	0.0107																		
Pop05	0.061*	0.0743**	0.0889	0.0347																	
Pop06	0.0267	0.0124	0.0286	–0.0085	0.0657**																
Pop07	0.0365	0.0697*	0.0453	0.0284	0.0339	0.0517															
Pop08	0.0382	0.0081	0.0148	0.0083	0.0385*	0.0264	0.0431														
Pop09	0.0284	0.0181	0.0533	0.0027	0.0396*	0.0216	0.0465	0.0061													
Pop10	0.0172	0.0188	0.0441	–0.0016	0.0325	0.0147	0.0347	0.0095	–0.0011												
Pop11	0.0493	0.036	0.0537	0.0152	0.0399	0.0346	0.0475	0.023	0.0312	0.0218											
Pop12	0.0276	0.0339	0.055	0.0117	0.0412	0.0245	0.0265	0.0264	–0.0023	0.0056	0.0275										
Pop13	0.0515	0.032	0.0601	0.0163	0.0526	0.0347	0.0633	0.0181	0.0064	0.0144	0.0437	0.0314									
Pop14	0.0342	0.05	0.0603	0.0283	0.0541*	0.0568*	0.0367	0.0262	0.0166	0.0248	0.029	0.0126	0.0503								
Pop15	0.0428	0.0653*	0.062	0.0336	0.0541**	0.0607**	0.0279	0.0457	0.0313	0.0446*	0.0309*	0.0247	0.0443	0.0226							
Pop16	0.0252	0.0401	0.0709	0.0125	0.0275	0.021	0.0348	0.0379	–0.0004	0.0062	0.0302	0.0031	0.01	0.0379	0.0309						
Pop17	0.0051	0.0212	0.0464	–0.0019	0.0394	0.026	0.0358	0.012	–0.0005	0.0056	0.0278	0.0143	0.0312	–0.002	0.0297	0.0217					
Pop18	0.0264	0.0475	0.0558	0.0185	0.0599	0.0347	0.0282	0.0268	0.0027	0.0133	0.0385	0.0093	0.0357	0.0043	0.0085	0.0181	–0.0058				
Pop19	0.0136	0.0287	0.0614	0.0203	0.0501	0.034	0.0617	0.0309	0.0108	0.014	0.0452	0.0236	0.0365	0.0013	0.0333	0.0165	–0.0098	0.0037			
Pop20	0.0143	0.0383	0.0754	0.0248	0.0362*	0.0406	0.0478	0.0294	0.0045	0.0099	0.0326	0.0128	0.0358	0.0112	0.0305	0.0187	0.0001	0.0092	0.0026		
Pop21	0.0599	0.0614	0.0624	0.0296	0.0451*	0.0535	0.0374	0.0421	0.027	0.0484	0.0561	0.0401	0.0398	0.0321	0.0314	0.0453	0.0289	0.0296	0.042	0.0309	
Pop22	0.0756	0.1053*	0.1049	0.0605	0.0860*	0.0831*	0.0383	0.084	0.0610*	0.0669*	0.0785*	0.0503	0.068	0.0656	0.053*	0.0555	0.0667*	0.0353	0.0828	0.0612*	0.0544

On-line Suppl. Tab. 4. Results of genetic assignment of individuals per population. For each genotype (*Quercus pubescens* pure individuals or off-types) the number of individuals and their percentage (in brackets) are reported.

Population	*Q. pubescens*	off-types
Pop01	15 (93.75)	1 (6.25)
Pop02	14 (87.50)	2 (12.50)
Pop03	16 (100)	0
Pop04	15 (93.75)	1 (6.25)
Pop05	15 (100)	0
Pop06	15 (100)	0
Pop07	16 (100)	0
Pop08	15 (93.75)	1 (6.25)
Pop09	15 (88.24)	2 (11.76)
Pop10	14 (87.50)	2 (12.50)
Pop11	16 (100)	0
Pop12	15 (100)	0
Pop13	8 (66.67)	4 (33.33)
Pop14	16 (100)	0
Pop15	14 (93.33)	1 (6.67)
Pop16	9 (90.00)	1 (10.00)
Pop17	13 (100)	0
Pop18	14 (100)	0
Pop19	13 (92.86)	1 (7.14)
Pop20	13 (92.86)	1 (7.14)
Pop21	15 (93.75)	1 (6.25)
Pop22	10 (90.91)	1 (9.09)
Total	306 (94.15)	19 (5.85)



On-line Supp. Fig. 1 Delta *K* values from the Evanno's method at *K* = 1–10 in the 22 *Quercus pubescens* populations sampled.