

SUPPLEMENTARY DATA

TABLE S1. List of olive cultivars characterized in the present study. Their origin (country, collection or field collect) and ptDNA haplotype (ptDNA) are given. Most cultivars were collected in the Olive World Germplasm Bank of Marrakech (OWGB-Marrakech). All accessions were analyzed using ten nuclear microsatellites. Accessions of each country are *a priori* assigned to a geographic zone (i.e. West, Central or East). *In order to exclude possible clonal variants, accessions that differed by only one or two alleles were considered as being the same cultivar.

Region of origin	Cultivars	Country	Origin	ptDNA
Morocco (West)	Berri Meslal	Morocco	OWGB-Marrakech	E 1-1
	Berri Meslal3	Morocco	OWGB-Marrakech	E 3-3
	Bouchouika	Morocco	INRAM	E 1-1
	Bouchouk laghlid	Morocco	OWGB-Marrakech	E 1-1
	Bouchouk laghlid	Morocco	Field collection	E 1-1
	Bouchouk rkik	Morocco	OWGB-Marrakech	E 1-1
	Chaouen, local type 2	Morocco	Field collect	E 2-4
	Dehbia	Morocco	OWGB-Marrakech	E 1-1
	Hamrani / ZZ6*	Morocco	OWGB-Marrakech	E 1-1
	Hamrani 2	Morocco	OWGB-Marrakech	E 1-1
	Marrakech, local type 40	Morocco	Menara garden	E 2-1
	Meslala - Marrakech	Morocco	OWGB-Marrakech	E 1-3
	Ouazzane, local type 5	Morocco	Field collect	E 1-1
	Ouazzane, local type 7	Morocco	Field collect	E 3-2
	Picholine Marocaine / Haouzia / Menara / Sigoise / Fakhoukha*	Morocco / Algeria	OWGB-Marrakech, INRAM & Field collect	E 1-1
	Ronde de la Ménara	Morocco	OWGB-Marrakech	E 1-1
	Sefrou, local type 18	Morocco	Field collect	E 3-2
	ZDH1 / ZDH3 / ZZ1 / ZZ10 / Sigoise 1 / Sinawi*	Morocco / Algeria / Egypt	OWGB-Marrakech	E 1-1
	ZDH4	Morocco	OWGB-Marrakech	E 1-1
	ZDH6	Morocco	OWGB-Marrakech	E 1-1
	Zeitun lkhl	Morocco	OWGB-Marrakech	E 1-1
	Zms1	Morocco	OWGB-Marrakech	E 1-1
	Zms2 / ZDH7*	Morocco	OWGB-Marrakech	E 1-1
Zmj1 / Lastovka *	Morocco / Croatia	OWGB-Marrakech	E 1-1	
Zsb10	Morocco	OWGB-Marrakech	E 1-1	
Zsb2	Morocco	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Algeria (Central)	Abani	Algeria	OWGB-Marrakech	E 2-1
	Aberkane	Algeria	OWGB-Marrakech	E 1-1
	Aghchren de Titest	Algeria	OWGB-Marrakech	E 1-1
	Aghchren d'Elousseur / Azeradj Tamorka*	Algeria	OWGB-Marrakech	E 1-1
	Agrarez	Algeria	OWGB-Marrakech	E 1-1
	Aguentaou	Algeria	OWGB-Marrakech	E 1-2
	Aharoune	Algeria	OWGB-Marrakech	E 3-2
	Ahia Ousbaa	Algeria	OWGB-Marrakech	E 2-1
	Aïmel	Algeria	OWGB-Marrakech	E 1-1
	Akenane	Algeria	OWGB-Marrakech	E 1-1
	Akerma	Algeria	OWGB-Marrakech	E 1-1
	Azeboudj de Khirane	Algeria	OWGB-Marrakech	E 2-1
	Azeradj	Algeria	OWGB-Marrakech	E 1-1
	Blanquette de Castu	Algeria	OWGB-Marrakech	E 1-1
	Blanquette de Guelma	Algeria	OWGB-Marrakech	E 1-2
	Bouchouk Lafayette	Algeria	OWGB-Marrakech	E 1-1
	Bouchouk Soummam	Algeria	OWGB-Marrakech	E 1-1
	Boukaïla	Algeria	OWGB-Marrakech	E 1-1
	Bouricha	Algeria	OWGB-Marrakech	E 3-3
	Chemlal de Kabylie	Algeria	OWGB-Marrakech	E 3-2
	Ferkani / Jemri bouchouka*	Algeria / Tunisia	OWGB-Marrakech	E 1-1
	Grosse du Hamma	Algeria	OWGB-Marrakech	E 1-2
	Hamra	Algeria	OWGB-Marrakech	E 3-3
	Ifiri	Algeria	OWGB-Marrakech	E 1-1
	Khadraïa	Algeria	OWGB-Marrakech	E 2-1
	Limli	Algeria	OWGB-Marrakech	E 1-1
	Longue de Meliana	Algeria	OWGB-Marrakech	E 1-1
	Mekki	Algeria	OWGB-Marrakech	E 1-1
	Neb jmel	Algeria	OWGB-Marrakech	E 2-1
	Ronde de Meliana	Algeria	OWGB-Marrakech	E 1-1
	Rougette de Metidja	Algeria	OWGB-Marrakech	E 1-1
	Souidi	Algeria	OWGB-Marrakech	E 2-1
Taksrit	Algeria	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Algeria (Central)	Tefah	Algeria	OWGB-Marrakech	E 1-1
	Zeboudj Boudoudan	Algeria	OWGB-Marrakech	E 1-1
	Zeletni	Algeria	OWGB-Marrakech	E 2-1
Tunisia (Central)	Barouni	Tunisia	OWGB-Marrakech	E 1-1
	Beldi	Tunisia	OWGB-Marrakech	E 1-1
	Besbessi	Tunisia	OWGB-Marrakech	E 1-1
	Chemchali nord	Tunisia	OWGB-Marrakech	E 1-2
	Chemlali chouamekh	Tunisia	OWGB-Marrakech	E 1-1
	Chemlali nord	Tunisia	OWGB-Marrakech	E 1-1
	Chetoui	Tunisia	OWGB-Marrakech	E 1-2
	Derras	Tunisia	OWGB-Marrakech	E 1-2
	Dhokar / Taounate, local type 15*	Tunisia/Morocco	OWGB-Marrakech & Field collect	L 1-1
	Drissi	Tunisia	OWGB-Marrakech	E 1-2
	Fouji vert	Tunisia	OWGB-Marrakech	E 1-1
	Gerboui Nord	Tunisia	OWGB-Marrakech	E 1-2
	Jemri	Tunisia	OWGB-Marrakech	E 1-1
	Marsaline	Tunisia	OWGB-Marrakech	E 1-1
	Meski	Tunisia	OWGB-Marrakech	E 1-1
	Neb jmel	Tunisia	OWGB-Marrakech	E 1-1
	Rkhami	Tunisia	OWGB-Marrakech	E 1-2
	Sayali	Tunisia	OWGB-Marrakech	E 1-1
	Tounsi	Tunisia	OWGB-Marrakech	E 1-1
Tounsi Gafsa	Tunisia	OWGB-Marrakech	E 1-1	
Zalmati nord	Tunisia	OWGB-Marrakech	E 1-1	
Zarazzi / TL11*	Tunisia	INRAF & Field collects	E 3-2	
Iberian Peninsula (West)	Acebuchera	Spain	OWGB-Marrakech	E 1-1
	Alameno blanco	Spain	OWGB-Marrakech	E 1-1
	Alameno de Marchene	Spain	OWGB-Marrakech	E 1-1

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Iberian Peninsula (West)	Alameno de Montilla	Spain	OWGB-Marrakech	E 1-1
	Amargoso	Spain	OWGB-Marrakech	E 1-1
	Arbequina	Spain	OWGB-Marrakech	E 1-1
	Azul	Spain	OWGB-Marrakech	E 1-1
	Biancolilla	Spain	OWGB-Marrakech	E 1-1
	Blanqueta	Spain	WOGB-Cordoue	E 1-3
	Bolvino	Spain	OWGB-Marrakech	E 1-1
	Borriolenca	Spain	OWGB-Marrakech	E 3-1
	Canivano negro	Spain	OWGB-Marrakech	E 1-1
	Carasquillo	Spain	OWGB-Marrakech	E 1-1
	Carresqueno de Alcandate	Spain	OWGB-Marrakech	E 1-1
	Carresqueño de Jumilla 1	Spain	OWGB-Marrakech	E 1-1
	Carresqueño de Jumilla 2	Spain	OWGB-Marrakech	E 1-1
	Chorro	Spain	OWGB-Marrakech	E 1-1
	Corbelia	Spain	OWGB-Marrakech	E 3-1
	Cornezuelo de Jaen	Spain	OWGB-Marrakech	E 1-1
	Cornicabra	Spain	OWGB-Marrakech	E 1-1
	Dulzal	Spain	OWGB-Marrakech	E 1-1
	Empeltre	Spain	OWGB-Marrakech	E 1-1
	Enagua de arenas	Spain	OWGB-Marrakech	E 1-1
	Escarbajuelo de Ubeda	Spain	OWGB-Marrakech	E 1-1
	Fulla de salce	Spain	OWGB-Marrakech	E 3-1
	Habechuelero de Garazaleme	Spain	OWGB-Marrakech	E 1-1
	Hojiblanca	Spain	OWGB-Marrakech	E 1-1
	Jabaluna	Spain	OWGB-Marrakech	E 1-1
	Lechin de Granada	Spain	OWGB-Marrakech	E 1-1
	Lechin de Sevilla	Spain	OWGB-Marrakech	E 2-3
	Lentisca 1	Spain	OWGB-Marrakech	E 1-1
	Lentisca 2	Spain	OWGB-Marrakech	E 1-1
	Limoncillo	Spain	OWGB-Marrakech	E 1-1
	Llomete	Spain	OWGB-Marrakech	E 3-1
	Lloron de atarafe	Spain	OWGB-Marrakech	E 1-1
	Lloron de Izanalloz	Spain	OWGB-Marrakech	E 1-1
	Lloron de ronda	Spain	OWGB-Marrakech	E 1-1
	Loamine	Spain	OWGB-Marrakech	E 1-1
	Machorron	Spain	OWGB-Marrakech	E 1-1
Manzanilla de Almería	Spain	WOGB-Cordoue	E 1-1	
Manzanilla Caserina (Azeitera)	Spain	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Iberian Peninsula (West)	Manzanilla de Abla	Spain	OWGB-Marrakech	E 1-1
	Manzanilla de Agua	Spain	OWGB-Marrakech	E 1-1
	Manzanilla de Hellin	Spain	OWGB-Marrakech	E 1-1
	Manzanilla de Montefrío	Spain	OWGB-Marrakech	E 1-1
	Manzanilla de Sevilla / Chesna / Khello / Mission*	Spain / Syria / South Africa	OWGB-Marrakech	E 1-1
	Manzanilla de Tortosa	Spain	OWGB-Marrakech	E 1-1
	Meloncillo	Spain	OWGB-Marrakech	E 1-1
	Mollar de cieza	Spain	OWGB-Marrakech	E 1-1
	Morejona	Spain	OWGB-Marrakech	E 1-1
	Morisca	Spain	OWGB-Marrakech	E 1-1
	Morrut	Spain	OWGB-Marrakech	E 1-1
	Negral de Savinan	Spain	OWGB-Marrakech	E 1-1
	Negrillo de La Carlota	Spain	WOGB-Cordoue	E 1-1
	Negrillo de Arjona	Spain	OWGB-Marrakech	E 1-1
	Negrillo de estepa	Spain	OWGB-Marrakech	E 1-1
	Negrillo redondo	Spain	OWGB-Marrakech	E 1-1
	Nevado Azul	Spain	OWGB-Marrakech	E 1-1
	Nevado Rizado	Spain	OWGB-Marrakech	E 1-1
	Ocal	Spain	OWGB-Marrakech	E 1-1
	Ojo de liebre	Spain	OWGB-Marrakech	E 1-1
	Olivo de Mancha real	Spain	OWGB-Marrakech	E 1-1
	Olivo macho de Santestiban del puerto	Spain	OWGB-Marrakech	E 1-1
	Palamar	Spain	OWGB-Marrakech	E 3-1
	Patronet	Spain	OWGB-Marrakech	E 3-1
	Pavo	Spain	OWGB-Marrakech	E 1-1
	Picolimon de Grazalema	Spain	OWGB-Marrakech	E 1-1
	Picual	Spain	OWGB-Marrakech	E 1-1
	Picual de hoja clara	Spain	OWGB-Marrakech	E 1-1
	Picudo	Spain	OWGB-Marrakech	E 1-1
	Racimal	Spain	OWGB-Marrakech	E 1-1
	Rapasayo	Spain	OWGB-Marrakech	E 1-1
	Rechino	Spain	OWGB-Marrakech	E 1-1
Royal de casorla	Spain	OWGB-Marrakech	E 1-1	
Sebatera	Spain	OWGB-Marrakech	E 2-1	
Sevillano de Jumilla	Spain	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Iberian Peninsula (West)	Sevillenca	Spain	OWGB-Marrakech	E 1-1
	Tempranillo de lucena	Spain	OWGB-Marrakech	E 1-1
	Tempranillo de Yeste 1	Spain	OWGB-Marrakech	E 1-1
	Tempranillo de Yeste 2	Spain	OWGB-Marrakech	E 1-1
	Varudo	Spain	OWGB-Marrakech	E 1-1
	Vera	Spain	OWGB-Marrakech	E 3-1
	Verdal de Alhama	Spain	OWGB-Marrakech	E 1-1
	Verdala	Spain	OWGB-Marrakech	E 1-1
	Verdial de Huévar	Spain	WOGB-Cordoue	E 1-1
	Verdial de Vélez-Málaga	Spain	WOGB-Cordoue	E 1-1
	Verdiel	Spain	OWGB-Marrakech	E 1-1
	Azeitonera Azeitira	Portugal	OWGB-Marrakech	E 1-1
	Blanqueta Branquita	Portugal	OWGB-Marrakech	E 1-1
	Carrasquenha	Portugal	OWGB-Marrakech	E 1-1
	Cobrancosa	Portugal	OWGB-Marrakech	E 1-1
	Cordovil de Serpa	Portugal	OWGB-Marrakech	E 1-1
	Galega vulgar	Portugal	OWGB-Marrakech	E 1-2
	Lentisca	Portugal	OWGB-Marrakech	E 1-1
	Madural	Portugal	OWGB-Marrakech	E 1-1
	Mançanelha Algarvia	Portugal	OWGB-Marrakech	E 1-1
	Negrinha	Portugal	OWGB-Marrakech	E 1-1
	Redondal	Portugal	OWGB-Marrakech	E 1-1
	Santulhana	Portugal	OWGB-Marrakech	E 1-1
Verdal alentejna	Portugal	OWGB-Marrakech	E 1-1	
Verdal transmontana	Portugal	OWGB-Marrakech	E 1-1	
Continental France & Corsica (Central)	Aglandaou	France	OWGB-Marrakech	E 1-1
	Amellau	France	OWGB-Marrakech	E 1-1
	Bouteillan	France	OWGB-Marrakech	E 1-1
	Cayon	France	OWGB-Marrakech	E 2-1
	Grossane	France	OWGB-Marrakech	E 1-1
	Lucques	France	OWGB-Marrakech	E 1-1
	Olivière	France	OWGB-Marrakech	E 3-1
	Picholine du Gard	France	OWGB-Marrakech	E 2-1
	Salonenque	France	OWGB-Marrakech	E 1-1
	Verdale de l'Hérault	France	OWGB-Marrakech	E 1-1
	Capnacce	France, Corsica	Corte University	E 1-1
	Sabina	France, Corsica	Corte University	E 2-4
	Zinzala	France, Corsica	Corte University	E 2-2

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Italy (including Sardinia and Sicily) (Central)	Abunara	Italy	OWGB-Marrakech	E 1-2
	Aitana	Italy	OWGB-Marrakech	E 1-1
	Albatro	Italy	OWGB-Marrakech	E 1-1
	Allora	Italy	OWGB-Marrakech	E 1-1
	Americano	Italy	OWGB-Marrakech	E 1-1
	Americano Itafir	Italy	OWGB-Marrakech	E 1-1
	Angellina	Italy	OWGB-Marrakech	E 1-1
	Arancino	Italy	OWGB-Marrakech	E 1-1
	Ascolana tenera	Italy	OWGB-Marrakech	E 1-1
	Bella Dispagna	Italy	OWGB-Marrakech	E 1-2
	Belvedere Maritima, local type	Italy	Field collect	E 1-1
	Bianchera	Italy	OWGB-Marrakech	E 1-1
	Biancolilla	Italy	OWGB-Marrakech	E 1-2
	Bonifati, local type	Italy	Field collect	E 2-1
	Bosana	Italy	CPFS	E 1-1
	Bottone Digallo	Italy	OWGB-Marrakech	E 1-1
	Brandofino	Italy	OWGB-Marrakech	E 1-1
	Calatina	Italy	OWGB-Marrakech	E 1-1
	Caraputea	Italy	OWGB-Marrakech	E 1-1
	Caratina	Italy	OWGB-Marrakech	E 1-1
	Carboncella	Italy	OWGB-Marrakech	E 1-1
	Cariasina	Italy	OWGB-Marrakech	E 1-1
	Carolea 1	Italy	OWGB-Marrakech	E 1-2
	Carolea 2	Italy	OWGB-Marrakech	E 1-2
	Carsicana da mensa	Italy	OWGB-Marrakech	E 1-1
	Cassanese	Italy	OWGB-Marrakech	E 1-1
	Castiglione	Italy	OWGB-Marrakech	E 1-1
	Castriciana	Italy	OWGB-Marrakech	E 1-1
	Castricianella	Italy	OWGB-Marrakech	E 1-1
	Cavalieri	Italy	OWGB-Marrakech	E 1-1
	Celeste, local type	Italy	Field collect	E 1-1
	Cerasuola	Italy	OWGB-Marrakech	E 3-2
	Ciciarillo	Italy	OWGB-Marrakech	E 1-1
Cilieginio	Italy	OWGB-Marrakech	E 1-1	
Cima di Melfi	Italy	OWGB-Marrakech	E 1-1	
Confetto	Italy	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Italy (including Sardinia and Sicily) (Central)	Coratina 1	Italy	OWGB-Marrakech	E 1-1
	Coratina 2	Italy	OWGB-Marrakech	E 1-1
	Correggiolo di pallesse	Italy	OWGB-Marrakech	E 1-1
	Corsicana da olio	Italy	OWGB-Marrakech	E 1-1
	Crastu	Italy	OWGB-Marrakech	E 2-2
	Cucca 1	Italy	OWGB-Marrakech	E 1-1
	Cucca 2	Italy	OWGB-Marrakech	E 1-1
	Cuoricino	Italy	OWGB-Marrakech	E 1-1
	Dolce de Rossano	Italy	OWGB-Marrakech	E 1-1
	Dritta di Muscufo	Italy	OWGB-Marrakech	E 1-1
	Emilia	Italy	OWGB-Marrakech	E 1-1
	Fasolona	Italy	OWGB-Marrakech	E 1-1
	Filare	Italy	OWGB-Marrakech	E 1-1
	Firezuelo	Italy	OWGB-Marrakech	E 1-1
	Frantoio 1	Italy	OWGB-Marrakech	E 1-1
	Frantoio 2	Italy	OWGB-Marrakech	E 1-1
	Gentile di Chiete	Italy	OWGB-Marrakech	E 1-1
	Giarfara	Italy	OWGB-Marrakech	E 1-1
	Giarraffa	Italy	OWGB-Marrakech	E 1-2
	Ginestrino	Italy	OWGB-Marrakech	E 1-1
	Giogolino	Italy	OWGB-Marrakech	E 1-1
	Gordale Sevillana	Italy	OWGB-Marrakech	E 1-2
	Grappolo	Italy	OWGB-Marrakech	E 1-1
	Gremigna Tonda	Italy	OWGB-Marrakech	E 1-1
	Gremigno di Fuglia	Italy	OWGB-Marrakech	E 2-2
	Gremignolo di Bogheri	Italy	OWGB-Marrakech	E 1-1
	Grossa di spagna 1	Italy	OWGB-Marrakech	E 1-1
	Grossa di spagna 2	Italy	OWGB-Marrakech	E 1-1
	Grossolana	Italy	OWGB-Marrakech	E 1-1
	Intosso	Italy	OWGB-Marrakech	E 1-1
	Itrana 1	Italy	OWGB-Marrakech	E 1-1
	Itrana 2	Italy	OWGB-Marrakech	E 1-1
	Larcianese	Italy	OWGB-Marrakech	E 1-1
Lastrino	Italy	OWGB-Marrakech	E 1-1	
Lazzera reale	Italy	OWGB-Marrakech	E 1-1	
Lazzero di prata	Italy	OWGB-Marrakech	E 1-1	
Leccino	Italy	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Italy (including Sardinia and Sicily) (Central)	Leccio del Corno	Italy	OWGB-Marrakech	E 1-1
	Leccio Maremmano	Italy	OWGB-Marrakech	E 1-1
	Leccio Marmmuono	Italy	OWGB-Marrakech	E 1-1
	Leccione	Italy	OWGB-Marrakech	E 1-1
	Lumario	Italy	OWGB-Marrakech	E 1-1
	Maiorca	Italy	OWGB-Marrakech	E 1-1
	Manna	Italy	OWGB-Marrakech	E 1-1
	Mantonica	Italy	OWGB-Marrakech	E 1-1
	Maremmano	Italy	OWGB-Marrakech	E 1-1
	Mariatica di Ferrandino	Italy	OWGB-Marrakech	E 1-1
	Marzio	Italy	OWGB-Marrakech	E 1-1
	Maurino 1	Italy	OWGB-Marrakech	E 1-1
	Maurino 2	Italy	OWGB-Marrakech	E 1-1
	Mignolo	Italy	OWGB-Marrakech	E 1-1
	Mignolo cerretanolo Carretano	Italy	OWGB-Marrakech	E 1-1
	Monte San' Angelo, local type	Italy	Field collect	E 1-1
	Moraiolo 1	Italy	OWGB-Marrakech	E 1-1
	Moraiolo 2	Italy	OWGB-Marrakech	E 1-1
	Morchiaio 1	Italy	OWGB-Marrakech	E 1-1
	Morchiaio 2	Italy	OWGB-Marrakech	E 1-1
	Morchione	Italy	OWGB-Marrakech	E 1-1
	Morcone	Italy	OWGB-Marrakech	E 1-3
	Morello a punta	Italy	OWGB-Marrakech	E 1-1
	Moresca	Italy	OWGB-Marrakech	E 1-2
	Mortellino	Italy	OWGB-Marrakech	E 1-1
	Nasitana FG	Italy	OWGB-Marrakech	E 1-1
	Nebra catanese	Italy	OWGB-Marrakech	E 1-1
	Nera di oliena / Terza piccolo*	Italy	OWGB-Marrakech	E 1-1
	Nera digonnos	Italy	OWGB-Marrakech	E 1-1
	Nerba	Italy	OWGB-Marrakech	E 1-1
	Nocellara del bellica 1	Italy	OWGB-Marrakech	E 1-1
	Nocellara del bellica 2	Italy	OWGB-Marrakech	E 1-1
	Nocellara Messinese 1	Italy	OWGB-Marrakech	E 1-1
Nocellara Messinese 2	Italy	OWGB-Marrakech	E 1-1	
Nocellera etnia	Italy	OWGB-Marrakech	E 1-1	
Nociara	Italy	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Italy (including Sardinia and Sicily) (Central)	Ogliarola Bradano	Italy	OWGB-Marrakech	E 1-1
	Ogliarola vulture	Italy	OWGB-Marrakech	E 1-1
	Oliddu	Italy	OWGB-Marrakech	E 1-1
	olivastra di Monticino	Italy	OWGB-Marrakech	E 1-1
	Olivastra di popolonia	Italy	OWGB-Marrakech	E 1-1
	Olivastra seggianese	Italy	OWGB-Marrakech	E 1-1
	Olivo de casa vecchia	Italy	OWGB-Marrakech	E 1-1
	olivo del mulino	Italy	OWGB-Marrakech	E 1-1
	Olivo di Mandanese 1	Italy	OWGB-Marrakech	E 1-1
	Olivo di Mandanese 2	Italy	OWGB-Marrakech	E 1-1
	Olivo di Sanlorenzo	Italy	OWGB-Marrakech	E 1-1
	Ornellaia	Italy	OWGB-Marrakech	E 1-1
	Ottobratica	Italy	OWGB-Marrakech	E 1-1
	Palma	Italy	OWGB-Marrakech	E 1-1
	Passalunara	Italy	OWGB-Marrakech	E 1-1
	Paxheixedda / Tonda divillacidro*	Italy	OWGB-Marrakech	E 1-1
	Pendolino 1	Italy	OWGB-Marrakech	E 1-1
	Pendolino 2	Italy	OWGB-Marrakech	E 1-1
	Pexiatino	Italy	OWGB-Marrakech	E 1-1
	Piangente	Italy	OWGB-Marrakech	E 1-1
	Piricuddara	Italy	OWGB-Marrakech	E 1-1
	Pizz'è Carrognà	Italy	OWGB-Marrakech	E 1-1
	Pizzo di corvo	Italy	OWGB-Marrakech	E 1-2
	Ponteruelo	Italy	OWGB-Marrakech	E 1-1
	Puntino	Italy	OWGB-Marrakech	E 1-1
	Ravece	Italy	OWGB-Marrakech	E 1-1
	Razzaio	Italy	OWGB-Marrakech	E 1-1
	Razzo	Italy	OWGB-Marrakech	E 1-1
	Ropssellino Cerretano	Italy	OWGB-Marrakech	E 1-1
	Rosino	Italy	OWGB-Marrakech	E 1-1
	Rosselino	Italy	OWGB-Marrakech	E 1-1
	Salicino	Italy	OWGB-Marrakech	E 1-1
	San Agostino 1	Italy	OWGB-Marrakech	E 1-1
San Agostino 2	Italy	OWGB-Marrakech	E 1-1	
San Francesco 1	Italy	OWGB-Marrakech	E 1-1	
San Francesco 2	Italy	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Italy (including Sardinia and Sicily) (Central)	San Lazzero	Italy	OWGB-Marrakech	E 1-1
	San Marttinemga	Italy	OWGB-Marrakech	E 1-1
	Santa Catarina 1	Italy	OWGB-Marrakech	E 1-2
	Santa Catarina 2	Italy	OWGB-Marrakech	E 1-2
	Sassarese	Italy	OWGB-Marrakech	E 1-1
	Semidana	Italy	OWGB-Marrakech	E 1-1
	Sinopolese	Italy	OWGB-Marrakech	E 1-1
	Sivigliana da Mansa	Italy	OWGB-Marrakech	E 1-1
	Sivigliana da Olio	Italy	OWGB-Marrakech	E 2-1
	Terza grande	Italy	OWGB-Marrakech	E 1-1
	Tonda di caliagri	Italy	OWGB-Marrakech	E 1-1
	Tondello	Italy	OWGB-Marrakech	E 1-1
	Trillo	Italy	OWGB-Marrakech	E 2-2
	Uovo Dipiccione	Italy	OWGB-Marrakech	E 1-1
	Vaddarica	Italy	OWGB-Marrakech	E 1-1
	Slovenia (Central)	Boise	Slovenia	OWGB-Marrakech
Buga		Slovenia	OWGB-Marrakech	E 1-1
Crnica 1		Slovenia	OWGB-Marrakech	E 1-1
Drobnica		Slovenia	OWGB-Marrakech	E 1-1
Istrska belica		Slovenia	OWGB-Marrakech	E 1-1
Istrska belica pucer		Slovenia	OWGB-Marrakech	E 1-1
Samo		Slovenia	OWGB-Marrakech	E 1-1
Storta		Slovenia	OWGB-Marrakech	E 1-1
Croatia (East)	Carbunoela	Croatia	OWGB-Marrakech	E 1-1
	Crinca 2	Croatia	OWGB-Marrakech	E 1-1
	Drobnica	Croatia	OWGB-Marrakech	E 1-1
	Istarska crnica	Croatia	OWGB-Marrakech	E 1-1
	Mezanica	Croatia	OWGB-Marrakech	E 1-1
	Oblica / Samo Iv*	Croatia / Slovenia	OWGB-Marrakech	E 1-1
	Oleaster	Croatia	OWGB-Marrakech	E 1-1
	Plominca	Croatia	OWGB-Marrakech	E 1-1
Pontoza	Croatia	OWGB-Marrakech	E 1-1	

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA
Croatia (East)	Simjaka	Croatia	OWGB-Marrakech	E 1-1
	Sitnica	Croatia	OWGB-Marrakech	E 1-1
	Uljarica	Croatia	OWGB-Marrakech	E 1-1
	Velica Lastovka	Croatia	OWGB-Marrakech	E 1-1
Greece (East)	Amphisis	Greece	OWGB-Marrakech	E 1-1
	Chalkidikis	Greece	OWGB-Marrakech	E 1-1
	Dafnelia	Greece	OWGB-Marrakech	E 1-1
	Kalamon	Greece	WOGB-Cordoue	E 1-1
	Kalokerida	Greece	OWGB-Marrakech	E 3-1
	Karolia	Greece	OWGB-Marrakech	E 1-1
	Karydolia	Greece	OWGB-Marrakech	E 1-1
	Kolybada	Greece	OWGB-Marrakech	E 1-1
	Konservolia	Greece	WOGB-Cordoue	E 1-1
	Koroneiki	Greece	OWGB-Marrakech	E 1-1
	Kothreiki	Greece	OWGB-Marrakech	E 1-1
	Koutsonrelia	Greece	OWGB-Marrakech	E 1-1
	Mastoidis	Greece	OWGB-Marrakech	E 1-1
	Mirtolia	Greece	WOGB-Cordoue	E 1-1
Turkey (East)	Ayvalik (Edremit Yaglik)	Turkey	WOGB-Cordoue	E 1-1
	Belluti	Turkey	WOGB-Cordoue	E 1-1
	Bodrum, local type 1	Turkey	Field collect	E 1-1
	Bodrum, local type 2	Turkey	Field collect	E 1-1
	Cakir (Valanolia)	Turkey	WOGB-Cordoue	E 1-1
	Memecik	Turkey	WOGB-Cordoue	E 1-1
	Uslu	Turkey	WOGB-Cordoue	E 1-1
Egypt & Sudan (East)	Abou Monkar	Egypt	OWGB-Marrakech	E 1-1
	Aggezi Shami	Egypt	OWGB-Marrakech	E 1-1
	Aggizi Akse	Egypt	OWGB-Marrakech	E 1-1
	Aggizi Oshime	Egypt	OWGB-Marrakech	E 1-2
	Baid Lhmam	Egypt	OWGB-Marrakech	E 1-1

Table S1 (continued)

Region of origin	Cultivars	Country	Origin	ptDNA	
Egypt & Sudan (East)	Balady	Egypt	OWGB-Marrakech	E 1-2	
	Bez Elanza	Egypt	OWGB-Marrakech	E 1-1	
	Cairo 7	Egypt	OWGB-Marrakech	E 1-1	
	El Salam	Egypt	OWGB-Marrakech	E 1-1	
	Ellewa	Egypt	OWGB-Marrakech	E 1-1	
	Hamed	Egypt	OWGB-Marrakech	E 1-2	
	Kosiem	Egypt	OWGB-Marrakech	E 1-1	
	Maraki	Egypt	OWGB-Marrakech	E 1-2	
	Meloky	Egypt	OWGB-Marrakech	E 1-2	
	Sebhawy	Egypt	OWGB-Marrakech	E 1-1	
	Toffahi	Egypt	OWGB-Marrakech	E 1-2	
	Wardan	Egypt	OWGB-Marrakech	E 1-1	
	Wateken	Egypt	OWGB-Marrakech	E 2-1	
	Mt Nuba (Erkowit)	Sudan	Field collect	E 1-1	
	Levantine region (East)	Merhavia	Irsael	WOGB-Cordoue	E 1-1
		Baladi Tawil / Baladi Ain / Jlot / Cailletier*	Lebanon / France	OWGB-Marrakech	E 1-1
Kalbeltair		Lebanon	OWGB-Marrakech	E 1-1	
Abadi Abou Ghabbra		Syria	OWGB-Marrakech	E 1-2	
Abadi Rassasi		Syria	OWGB-Marrakech	E 1-1	
Abou Akfa		Syria	OWGB-Marrakech	E 1-3	
Abou Anaked		Syria	OWGB-Marrakech	E 1-3	
Ayrouni / Safrawi / Ksar Zeta*		Syria	OWGB-Marrakech	E 1-1	
Bed Al Iguel / Baladi Roumani*		Syria / Lebanon	OWGB-Marrakech	E 1-1	
Bent Alkade		Syria	OWGB-Marrakech	E 1-3	
Dan		Syria	OWGB-Marrakech	E 1-1	
Delle		Syria	OWGB-Marrakech	E 1-1	
Dimlali / Remmani / Bissani*		Syria / Lebanon	OWGB-Marrakech	E 1-1	
Djabali Kini		Syria	OWGB-Marrakech	E 1-2	
Djlot Tadmori / Shami Modabl*		Syria	OWGB-Marrakech	E 1-1	
Doebli / Mohazam Abou Satl*		Syria	OWGB-Marrakech	E 1-3	
Hembalassi		Syria	OWGB-Marrakech	E 1-1	
Idleb 1		Syria	OWGB-Marrakech	E 1-2	
Idleb 3		Syria	OWGB-Marrakech	E 1-2	

Table S1 (end)

Region of origin	Cultivars	Country	Origin	ptDNA
Levantine region (East)	Janude 2	Syria	OWGB-Marrakech	E 1-10
	Kaesi / Saifi / Tefahi Tadmori*	Syria	OWGB-Marrakech	E 1-1
	Karamani	Syria	OWGB-Marrakech	E 1-3
	Karme	Syria	OWGB-Marrakech	E 1-1
	Khashabi	Syria	OWGB-Marrakech	E 1-1
	Khuokhe	Syria	OWGB-Marrakech	E 1-2
	Killin	Syria	OWGB-Marrakech	E 1-2
	Maari	Syria	OWGB-Marrakech	E 1-1
	Mahati	Syria	OWGB-Marrakech	E 1-3
	Manakiri / Tebabs 1*	Syria	OWGB-Marrakech	E 1-2
	Mesyaf 2	Syria	OWGB-Marrakech	E 1-1
	Mesyaf 1	Syria	OWGB-Marrakech	E 1-12
	Mossabi	Syria	OWGB-Marrakech	E 1-2
	Palmyre, local type	Syria	Field collect	E 1-2
	Sorani / Baladi Kana / Roumani Kana / Analiontas 2 / Lefkara 1*	Syria / Lebanon / Cyprus	OWGB-Marrakech	E 1-1
	Souri	Syria	OWGB-Marrakech	E 1-3
	Stanbouli	Syria	OWGB-Marrakech	E 1-1
	Sukkare	Syria	OWGB-Marrakech	E 1-1
	Tarabelsi	Syria	OWGB-Marrakech	E 1-3
	Tebabs 2 / Oum Kanane*	Syria	OWGB-Marrakech	E 1-3
	Tefahi	Syria	OWGB-Marrakech	E 1-3
	Zael Almuhra	Syria	OWGB-Marrakech	E 1-1
	Zaity	Syria	WOGB-Cordoue	E 1-2
	Alethrico	Cyprus	OWGB-Marrakech	E 1-1
	Aredhiyoy 3	Cyprus	OWGB-Marrakech	E 1-1
	Kato Dris / Athalassa / Evrihoy 2 / Lefkosia*	Cyprus	OWGB-Marrakech	E 1-1
	Kato Dris 1 / Flasoy*	Cyprus	OWGB-Marrakech	E 1-1
	Kliroy 2	Cyprus	OWGB-Marrakech	E 1-1
	Korakoy	Cyprus	OWGB-Marrakech	E 1-1
	Lagoydhera	Cyprus	OWGB-Marrakech	E 1-1
	Lithrodontas	Cyprus	OWGB-Marrakech	E 1-1
	Menikon 1	Cyprus	OWGB-Marrakech	E 1-1

TABLE S2. List of wild olive populations (subsp. *europaea* and *laperrinei*) characterized in the present study. The locality of sampling, the number of individuals per location (N) and the GPS coordinates are given. Each Mediterranean population is *a priori* assigned to a geographic zone (i.e. West, Central or East).

Subspecies	Locality	Country	N	Lat.	Long.	
<i>europaea</i> (West)	Serra de Arabida	Portugal	9	38.494	-9.031	
	Alcalá de los Gazules, Cadiz	Spain	8	36.531	-5.602	
	Trassierra, Cordoba	Spain	8	37.907	-4.860	
	Cabo de San Antonio	Spain	9	38.802	0.196	
	Peñíscola, Castelon	Spain	8	40.342	0.382	
	Cabrera, Mallorca	Spain	8	39.145	2.938	
	Cala Gran, Mallorca	Spain	10	39.376	3.239	
	S'Albufera des Grau, Minorca	Spain	8	39.945	4.247	
	Heracles Cave	Morocco	9	35.791	-5.924	
	Mokrisset – Ouazzane	Morocco	8	35.036	-5.478	
	Bin El Ouidane	Morocco	8	32.110	-6.469	
	Sefrou-Zarhoun	Morocco	8	34.073	-5.543	
	Ameskroud	Morocco	9	30.543	-9.288	
	Asni	Morocco	8	31.244	-8.001	
	Tamanar	Morocco	5	31.111	-9.686	
<i>europaea</i> (Central)	Birkhadem – Gue de Constantine	Algeria	34	36.715	3.076	
	Mount Belloua	Algeria	7	36.727	4.060	
	Ichkeul	Tunisia	11	37.133	9.665	
	Zaghouan – El Fahs	Tunisia	6	36.380	10.040	
	Mont Boron	France	8	43.700	7.297	
	Ostriconi, Corsica	France	8	42.648	9.065	
	Roccapina, Corsica	France	11	41.498	8.946	
	Sassari, Sardinia	Italy	6	40.703	8.591	
	Dolianova, Sardinia	Italy	10	39.400	9.211	
	Menfi, Sicily	Italy	8	37.660	12.980	
	Cittadella del Capo	Italy	8	39.540	15.895	
	Santa Tegla	Italy	8	41.777	16.152	
	Wadi el Kuf	Libya	9	32.698	21.565	
	<i>europaea</i> (East)	Mlijet	Croatia	6	42.773	17.376
		Lokrum	Croatia	8	42.623	18.123
Gialova		Greece	13	36.964	21.711	
Kitries		Greece	8	36.926	22.153	

Table S2 (end)

Subspecies	Locality	Country	N	Lat.	Long.
<i>europaea</i> (East)	Sisses – Iraklio, Crete	Greece	9	35.388	24.893
	Komos, Crete	Greece	5	35.108	24.688
	Urla	Turkey	8	38.309	26.665
	Bodrum	Turkey	9	37.045	27.235
	Oludeniz	Turkey	6	36.561	29.106
	Stavrovouni	Cyprus	8	34.886	33.438
	Antakya	Turkey	13	35.968	36.129
	Rajo	Syria	8	36.693	36.641
	Fakrou	Syria	8	35.307	36.302
	Al Ascharinah	Syria	6	35.268	36.319
	Haram	Syria	8	36.217	36.562
	Tel Arruman	Jordan	2	32.183	35.821
	Mount Carmel	Israel	8	32.732	35.063
	<i>laperrinei</i>	Einzebib, Hoggar	Algeria	22	22.800
Intounine, Hoggar		Algeria	6	22.788	5.693
Tahassa, Hoggar		Algeria	14	22.802	5.678
Hadriane, Hoggar		Algeria	23	22.783	5.583
Tin-Hamor, Hoggar		Algeria	4	22.835	5.635
Akerakar « chaâba », Hoggar		Algeria	6	23.047	5.727
Ilenanene, Hoggar		Algeria	6	22.925	5.530
Oulet (Isekrâm), Hoggar		Algeria	10	22.907	5.572
Tin-Aleo/Tonget, Hoggar		Algeria	12	23.098	6.012
Adjelella, Hoggar		Algeria	14	22.632	5.607
Taessa, Hoggar		Algeria	10	23.072	5.513
Tizoûadj, Hoggar		Algeria	6	23.244	5.673
Vallée des Cyprès, Tassili n'Ajjer		Algeria	45	24.605	9.603
Faille du Tamgak « Ouest », Tamgak		Niger	20	19.054	8.598
Faille du Tamgak « Centre », Tamgak		Niger	16	19.069	8.649
Faille du Tamgak « Sud », Tamgak		Niger	8	18.994	8.662
Bagzane « Nord », Bagzane		Niger	38	17.832	8.750
Bagzane « Centre », Bagzane		Niger	9	17.736	8.747
Egalah, Bagzane		Niger	1	18.175	8.699

TABLE S3. Profiles of the 67 plastid DNA haplotypes revealed in the present study using 45 polymorphic loci. Alleles of each locus are coded for the reduced-median network analysis (Figure 1). Stretch size of the repeated motif is given for each microsatellite (36 loci), while a binary code (0/1) has been defined for seven indels and two single nucleotide polymorphisms. This coding was verified by sequencing alleles of a few haplotypes (for more details see Besnard *et al.* 2011). The 47 Mediterranean haplotypes were recently reported by Besnard *et al.* (2013) based on the characterization of 1797 Mediterranean accessions.

Subspecies	Haplotype	Plastid DNA Loci																																												
		CAPs-Xapi	CAPs-EonH	27	27	45	1	1	15	2	48	24	52	57-1	57-1	54-1	54-1	39	38	46	23	9	51	22	59	25	28	53	33	21	19	11-1	11-1	42	41	49	56	58	50	29	10-1	61				
<i>europaea</i>	E1.1	1	0	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.2	0	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	11	10	34	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.3	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.4	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.5	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	11	10	34	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.6	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.7	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	11	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.8	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	10	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.9	1	1	8	10	10	12	10	15	10	21	15	11	1	1	14	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.10	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	12	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.11	1	1	8	10	10	12	10	15	10	21	15	11	1	1	16	1	9	12	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.12	1	0	8	10	10	13	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.13	0	1	8	10	10	12	10	15	11	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.14	0	1	8	10	10	12	10	15	11	21	15	11	1	1	14	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.15	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.16	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	20	21	1	0	1
	E1.17	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	19	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	20	21	1	0	1
	E1.18	1	1	8	10	10	12	10	15	11	21	15	11	1	1	15	1	9	13	10	11	10	21	19	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.19	1	1	8	10	10	12	10	15	11	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.20	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.21	1	1	8	10	10	12	10	15	10	21	15	11	1	1	16	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.22	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	12	10	34	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.23	1	1	8	10	10	12	10	16	10	21	15	11	1	1	15	1	9	13	10	11	10	21	17	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.24	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	9	13	10	11	10	21	14	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.25	1	1	8	10	10	12	9	15	10	21	15	11	1	1	15	1	10	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.26	1	1	8	10	10	12	10	15	10	21	15	11	1	1	15	1	10	13	10	11	10	21	19	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
	E1.27	0	1	8	10	10	12	10	16	10	21	15	11	1	1	15	1	9	13	10	11	10	21	18	13	7	13	12	9	11	10	33	0	12	12	11	11	10	10	16	11	21	21	1	0	1
E2.1	1	1	8	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.2	0	1	8	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	33	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.3	1	1	8	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.4	0	1	8	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.5	1	1	8	10	10	11	9	16	10	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.6	1	1	8	10	10	11	9	16	10	21	16	11	1	0	13	0	9	13	11	9	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.7	1	1	8	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	12	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	21	21	0	0	1		
E2.8	1	1	9	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	10	10	15	11	22	21	0	0	1		
E2.9	1	1	9	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	13	7	13	12	9	11	10	32	1	14	12	12	11	10	15	11	22	21	0	0	1		
E2.10	0	1	8	10	10	11	9	16	11	21	16	11	1	0	13	0	9	13	11	10	11	20	11	14	7	13	12	9	11	10	33	1	14	12	12	10	10	15	11	21	21	0				

FIG. S1. Bayesian inference of population structure (based on ten nuclear SSRs) in the Mediterranean olive (including both cultivated and wild accessions; 860 individuals), for $K = 2, 3$ and 5 clusters. A model-based clustering method implemented in STRUCTURE v.2.3.4 (Pritchard *et al.* 2000) was used. H' represents similarity coefficient between ten runs for each K , while ΔK represents the ad-hoc measure of Evanno *et al.* (2005). The graph on the right bottom gives ΔK plotted against K . According to ΔK and H' , the most probable genetic structure model is $K = 2$ clusters ($\Delta K = 3536.7$ and $H' = 0.999$), for which most wild accessions from the western and central Mediterranean basin are distinguished from cultivars and eastern wild accessions; at $K = 3$, the western oleaster cluster remains but eastern cultivated olives and oleasters are distinguished from western and central Mediterranean cultivars; and at $K = 5$, a trend for the occurrence of a cultivar cluster in each predefined geographic zone (*i.e.* West, Central and East Mediterranean; Table S2) is revealed, as recently reported by Haouane *et al.* (2011). Central Mediterranean cultivars revealed the highest admixture level among the three gene pools as supported by the admixed inferred ancestry origins of most of its genotypes, whereas western and eastern cultivars revealed to be highly assigned to their respective gene pools (see also Haouane *et al.* 2011).

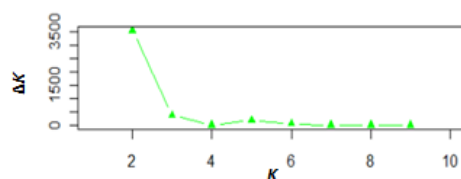
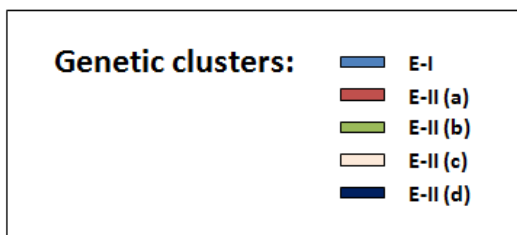
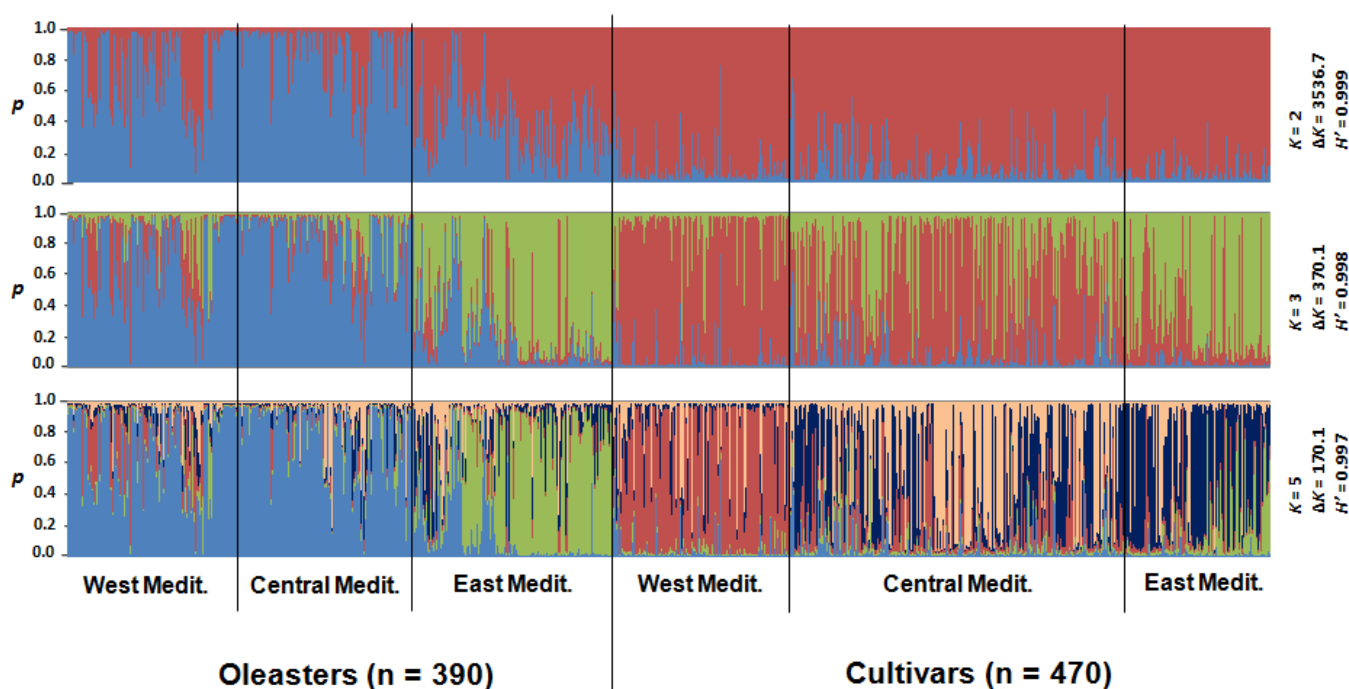
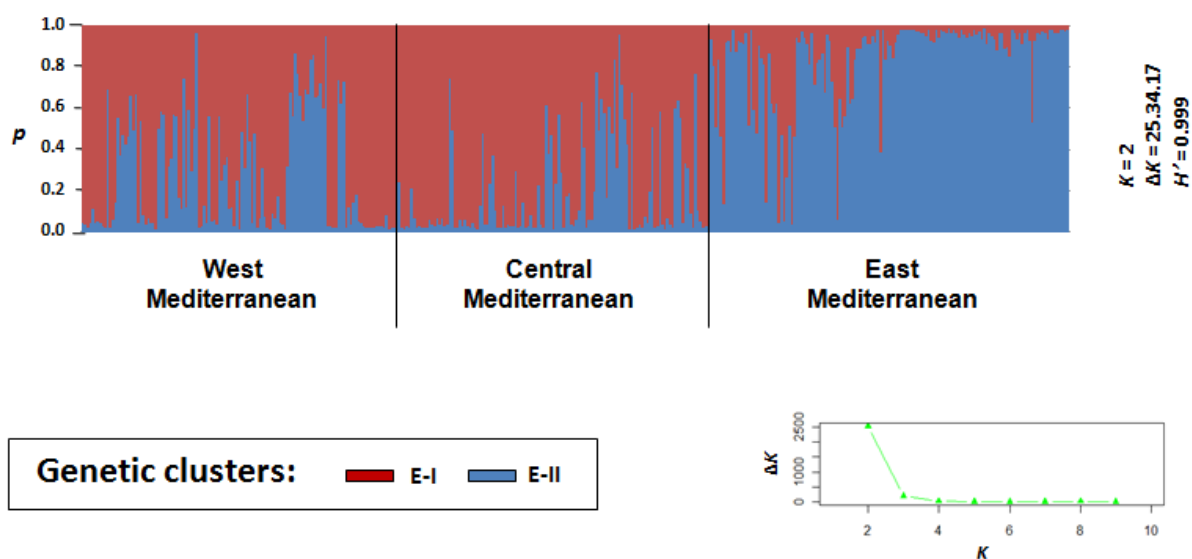


FIG. S2. Bayesian inference of population structure (based on ten nuclear SSRs) in the **a**) oleasters (390 individuals) and **b**) cultivated olives (470 individuals). A model-based clustering method implemented in STRUCTURE v.2.3.4 (Pritchard *et al.* 2000) was used. H' represents similarity coefficient between ten runs for each K , while ΔK represents the ad-hoc measure of Evanno *et al.* (2005). The graph on the right bottom gives ΔK plotted against K . According to ΔK and H' , the most probable genetic structure model is $K = 2$ clusters for oleasters, and $K = 3$ for cultivars. In oleasters (a), eastern accessions are mostly assigned to cluster E-II while western and central accessions are mainly assigned to cluster E-I (as shown in Figure 2, for $K = 3$ or 5). In cultivars (b), a trend for the occurrence of a cultivar cluster in each predefined geographic zone (*i.e.* West, Central and East Mediterranean; Table S2) is revealed (as shown in Figure S1). Central Mediterranean cultivars revealed the highest admixture level among the three gene pools as supported by the admixed inferred ancestry origins of most of its genotypes, whereas western and eastern cultivars revealed to be highly assigned to their respective gene pools (see also Haouane *et al.* 2011; Belaj *et al.* 2012; Díez *et al.* 2012).

a.



b.

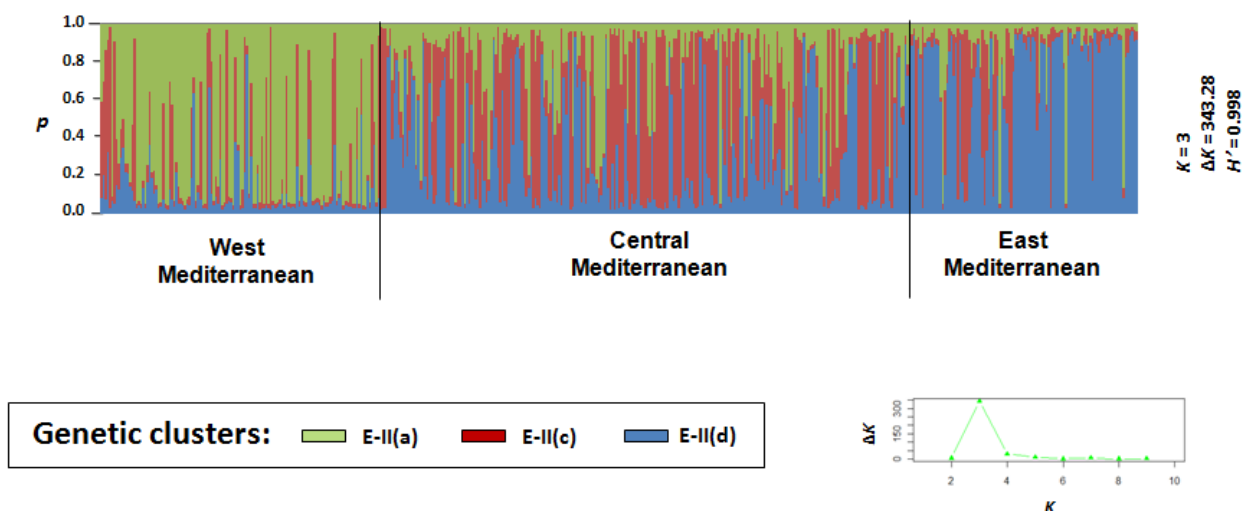


FIG. S3. Bayesian inference of population structure (based on ten nuclear SSRs) for two pairwise comparisons: **a)** Laperrine’s olive-Oleasters (660 individuals) and **b)** Laperrine’s olive-Cultivars (740 individuals). A model-based clustering method implemented in STRUCTURE v.2.3.4 (Pritchard *et al.* 2000) was used. Each vertical bar represents an individual. The membership coefficients of assignment (p) of each individual to the different clusters averaged over ten iterations is shown for $K = 3$ or 4 clusters. H' represents similarity coefficient between ten runs for each K and ΔK is the ad-hoc measure of Evanno *et al.* (2005). The graph on the right bottom gives ΔK plotted against K . The taxa (i.e. Laperrine’s olive, oleasters, cultivars) are indicated, and three predefined regions are recognised for both oleasters and cultivars (Tables S1 and S2). “West Mediterranean” corresponds to accessions from Morocco and the Iberian Peninsula, “Central Mediterranean” corresponds to accessions from Algeria to Libya and France to Continental Italy, and “East Mediterranean” corresponds to accessions from Croatia to the Levant. Most accessions of subspp. *laperrinei* and *europaea* are assigned to clusters L and E, respectively. The putative admixed individuals ($p > 0.1$) are indicated by arrows.

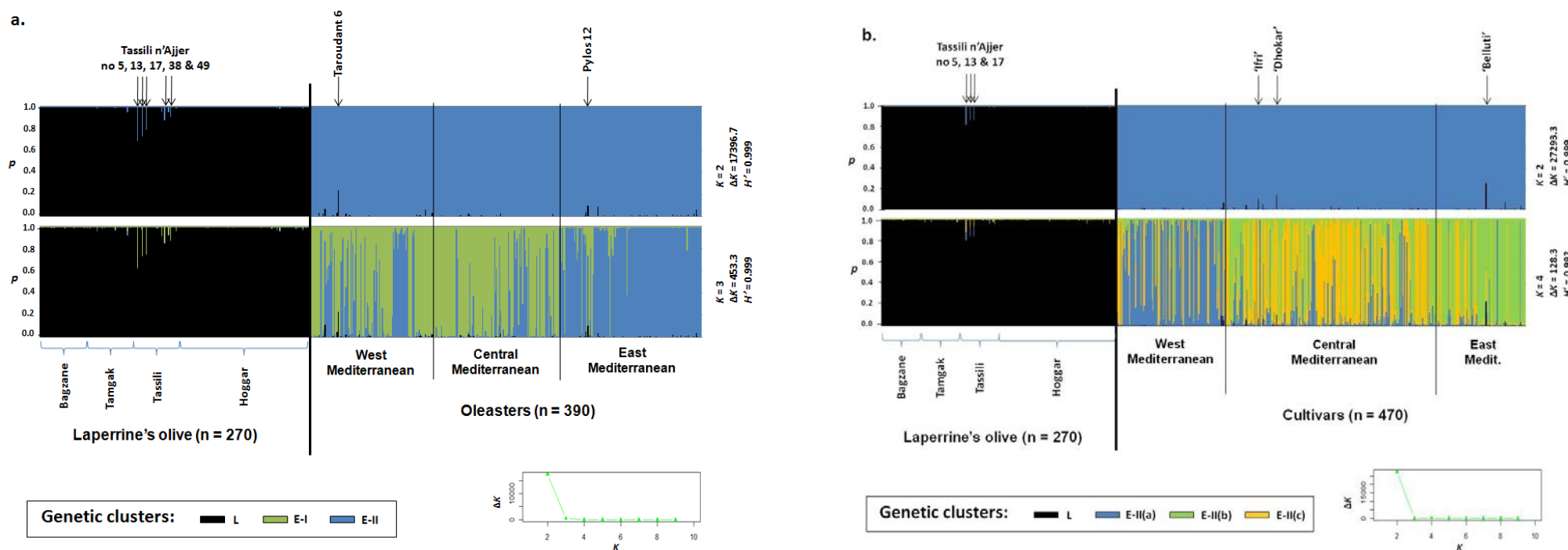
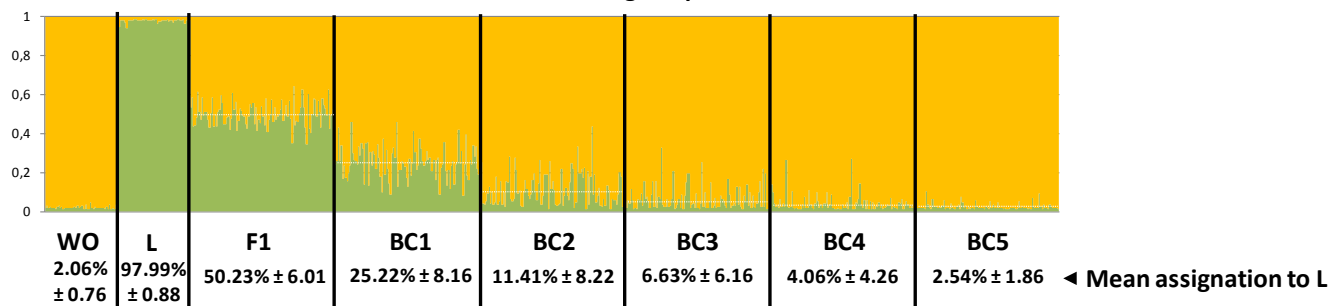


FIG. S4. Simulation of early and advanced generations of backcrosses between western oleasters and Laperrine's olive. Fifty genotypes of both Laperrine's olive (from Tassili n'Ajjer and Hoggar) and oleasters (from the west-central Mediterranean gene pool) were randomly selected. Aiming to exclude recent hybrids, these genotypes were randomly selected among individuals assigned to the Laperrine's olive or oleaster populations with $p > 0.99$ (Figure 3). We then generated 100 genotypes of each F1 and successive backcrossed genotypes (from BC1 to BC5) with HYBRIDLAB (Nielsen *et al.* 2006). The genotypes were used to carry out admixture analyses with STRUCTURE v.2.3.4 (Pritchard *et al.* 2000) for $K = 2$ clusters. **a)** Results for successive backcrosses in the western Mediterranean oleaster gene pool. The mean assignment to the Laperrine's olive cluster (with the standard deviation) is indicated at the bottom of the plot. As expected, the assignment level to cluster L progressively decreases in advanced generations of backcrosses. **b)** Results for successive backcrosses in the Laperrine's olive gene pool. The mean assignment to the western oleaster cluster (with the standard deviation) is indicated at the bottom of the plot. As expected, the assignment level to cluster WO progressively decreases in advanced generations of backcrosses.

a. Back-crosses in the western Mediterranean oleaster gene pool



b. Back-crosses in the Laperrine's olive gene pool

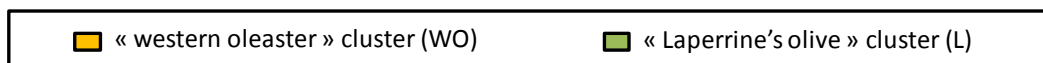
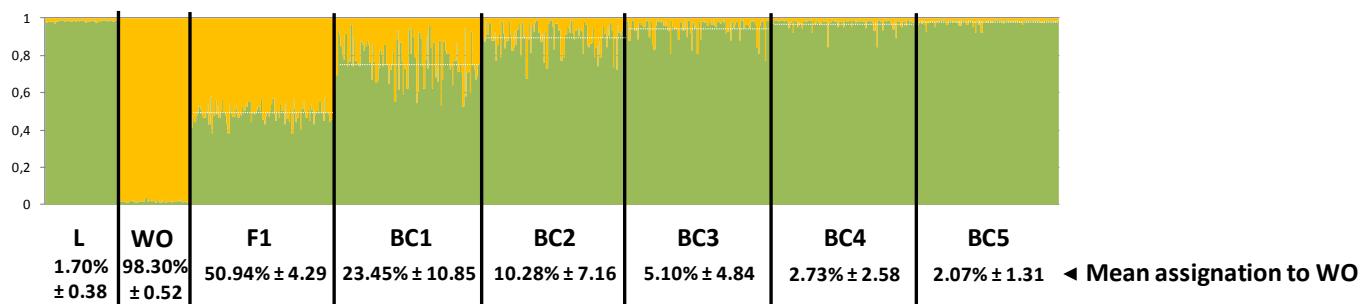
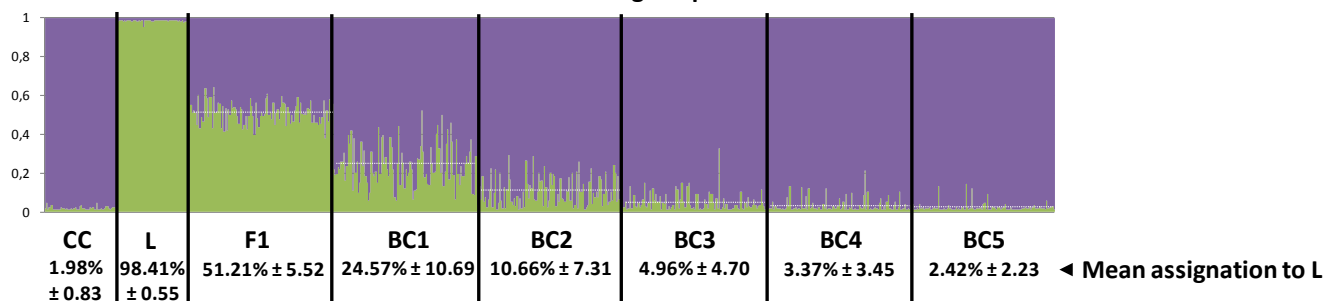


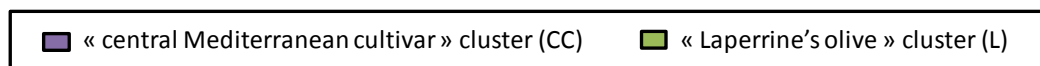
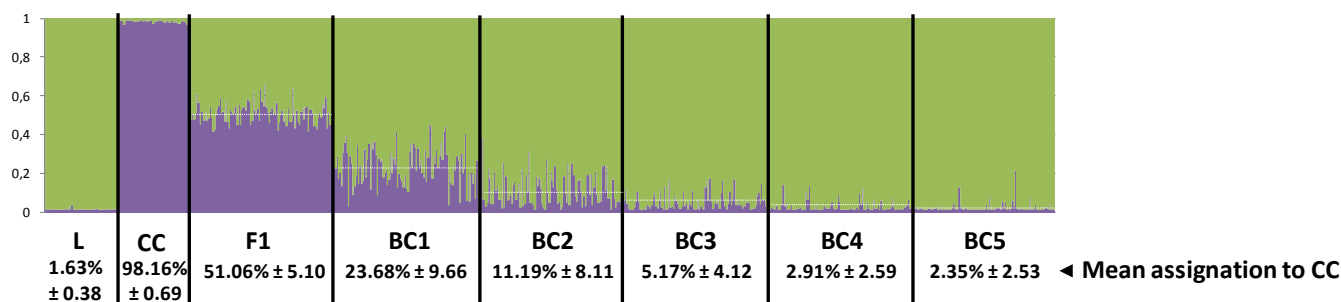
FIG. S5. Simulation of early and advanced generations of backcrosses between Central Mediterranean cultivars and Laperrine's olive. Fifty genotypes of both Laperrine's olive (from Tassili n'Ajjer and Hoggar) and olive varieties from the central Mediterranean gene pool were randomly selected. Aiming to exclude recent hybrids, these genotypes were randomly selected among individuals assigned to the Laperrine's olive population with $p > 0.99$ or olive varieties with $p > 0.95$ (Figure 3). We then generated 100 genotypes of each F1 and successive backcrossed genotypes (from BC1 to BC5) with HYBRIDLAB (Nielsen *et al.* 2006). The genotypes were used to carry out admixture analyses with STRUCTURE v.2.3.4 (Pritchard *et al.* 2000) for $K = 2$ clusters. **a)** Results for successive backcrosses in the cultivar gene pool. The mean assignment to the Laperrine's olive cluster (with the standard deviation) is indicated at the bottom of the plot. As expected, the assignment level to cluster L progressively decreases in advanced generations of backcrosses. **b)** Results for successive backcrosses in the Laperrine's olive gene pool. The mean assignment to the cultivar cluster (with the standard deviation) is indicated at the bottom of the plot. As expected, the assignment level to cluster CC progressively decreases in advanced generations of backcrosses.

In both cases (Figures S4 and S5), when the contribution of a parental taxon decreases, the assignment level to its corresponding cluster similarly decreases. In our dataset, ten individuals were recognized as early-generations of hybrids between Mediterranean and Saharan olives. The assignment level of such trees to the "minor" parental contributor ranges from 31.7 to 10.1%. When this assignment level exceeds 20%, the trees likely correspond to a BC1 generation (i.e. Tassili no 5, 13 and 17, "Belluti", Taroudant no 6), while an assignment level around 10-12% may correspond to a BC2 generation. In any case, the confidence interval is quite large and these values remain indicative. To improve the approach, it is obvious that the use of a higher number of loci can help to better assess the contribution of each gene pool in advanced generations of backcrosses (e.g. Vähä & Primmer 2006).

a. Back-crosses in the Central Mediterranean cultivated gene pool



b. Back-crosses in the Laperrine's olive gene pool



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