Table S1. Decimal coordinates of the 34 populations of bioregions and collection date in the three years.

CAT	LatDEC	LongDEC	collection date 2011	collection date 2012	collection date 2013
C-4a					
558	42.543889	-2.594444	23 August 2011	28 August 2012	20 August 2013
559	42.947222	-2.663889	24 August 2011	28 August 2012	20 August 2013
560	42.993889	-2.960556	24 August 2011	28 August 2012	20 August 2013
561	42.904722	-3.061111	24 August 2011	28 August 2012	20 August 2013
562	42.947500	-3.128333	24 August 2011	28 August 2012	20 August 2013
563	43.033333	-3.382222	24 August 2011	28 August 2012	20 August 2013
564	42.989444	-3.503333	24 August 2011	27 August 2012	19 August 2013
565	42.916389	-3.609722	24 August 2011	27 August 2012	19 August 2013
566	42.871667	-3.796667	24 August 2011	27 August 2012	19 August 2013
P-7a					
530	42.587222	0.224722	16 August 2011	4 September 2012	27 August 2013
531	42.504167	0.171389	16 August 2011	4 September 2012	27 August 2013
534	42.444444	0.388333	16 August 2011	4 September 2012	27 August 2013
535	42.468333	0.050278	17 August 2011	5 September 2012	28 August 2013
536	42.436389	0.033333	17 August 2011	5 September 2012	28 August 2013
537	42.327222	-0.262222	17 August 2011	5 September 2012	28 August 2013
538	42.309722	-0.364722	17 August 2011	5 September 2012	28 August 2013
539	42.402778	-0.357778	17 August 2011	5 September 2012	28 August 2013
540	42.404444	-0.245278	17 August 2011	5 September 2012	28 August 2013
MC-18a					
552	41.378333	-3.098889	22 August 2011	22 August 2012	14 August 2013
553	41.525833	-2.865833	22 August 2011	22 August 2012	14 August 2013
554	41.619444	-2.773889	22 August 2011	22 August 2012	14 August 2013
555	41.727778	-2.727778	22 August 2011	22 August 2012	14 August 2013
556	42.246389	-2.457500	23 August 2011	29 August 2012	21 August 2013
557	42.267500	-2.610833	23 August 2011	29 August 2012	21 August 2013
567	42.637778	-3.697222	24 August 2011	27 August 2012	19 August 2013
MO-18b					
529	40.485278	-1.420556	15 August 2011	15 August 2012	13 August 2013
544	40.854444	-0.163056	18 August 2011	21 August 2012	13 August 2013
545	40.811389	-0.436111	18 August 2011	15 August 2012	13 August 2013
546	40.914722	-1.215278	18 August 2011	15 August 2012	13 August 2013
547	39.677222	-1.919167	12 August 2011	20 August 2012	12 August 2013
548	39.540833	-1.527778	12 August 2011	20 August 2012	12 August 2013
549	39.463056	-1.633056	12 August 2011	20 August 2012	12 August 2013
551	38.978333	-1.130278	12 August 2011	20 August 2012	12 August 2013
568	40.438056	-1.937500	1 September 2011	21 August 2012	13 August 2013

CAT: population code; LatDEC: decimal co-ordinates Latitude; LongDEC**:** decimal co-ordinates Longitude.

Table S2. EO yield (% on dry weight) and major components (in EO %) in 34 wild populations of *L. latifolia* Medik. for years and the mean for each year. For the Cantabroatlantic (C-4a) bioregion.

Year	component	n[a]	Minimum	Mean	S.D.	Maximum
2011	essential oil yield	9	0.83	2.42 ab	0.81	3.48
	1,8-cineole	9	22.69	33.06 a	8.32	42.48
	linalool	8	3.45	28.74 a	16.35	48.94
	camphor	6	10.01	15.30 a	7.43	29.77
2012	essential oil yield	9	1.08	1.89 b	0.61	2.71
	1,8-cineole	9	20.67	42.06 a	12.86	56.48
	linalool	9	18.73	30.18 a	11.09	49.94
	camphor	9	8.36	12.35 a	4.12	20.49
2013	essential oil yield	9	1.69	3.26 a	0.97	4.88
	1,8-cineole	9	20.86	39.47 a	9.30	54.94
	linalool	9	18.45	33.36 a	9.65	53.81
	camphor	9	6.09	11.43 a	3.90	18.05

n[a] Number of populations in which the component appear; Different letters indicate significant differences among years.

Table S3. EO yield (% on dry weight) and major components (in EO %) in 34 wild populations of *L. latifolia* Medik. for the Prepyrinean (P-7a) bioregion.

Year	Compound	n[a]	Minimum	Mean	S.D.	Maximum
2011	essential oil yield	9	1.16	2.76 ab	0.97	4.26
	1,8-cineole	9	13.05	24.84 a	6.02	30.83
	linalool	9	1.08	15.70 b	15.76	43.31
	camphor	9	25.33	31.54 a	3.25	36.67
2012	essential oil yield	9	0.97	1.83 b	0.68	2.99
	1,8-cineole	9	14.08	27.36 a	6.70	33.98
	linalool	9	22.29	31.71 a	8.66	47.99
	camphor	9	14.56	25.43 b	5.44	31.97
2013	essential oil yield	9	2.19	3.98 a	1.39	6.19
	1,8-cineole	9	17.09	21.19 a	2.73	24.43
	linalool	9	29.01	40.76 a	8.56	54.08
	camphor	9	18.63	24.16 b	4.48	31.82

n[a] Number of populations in which the component appear; Different letters indicate significant differences among years.

Table S4. EO yield (% on dry weight) and major components (in EO %) in 34 wild populations of *L. latifolia* Medik. for the Mediterranean Castillian (MC-18a) bioregion.

Year	Compound	n[a]	Minimum	Mean	S.D.	Maximum
2011	essential oil yield	7	1.08	2.07 b	0.64	2.69
	1,8-cineole	7	25.58	36.21 b	7.64	50.51
	linalool	6	4.10	19.15 b	11.81	32.41
	camphor	7	8.79	15.61 a	9.38	29.77
2012	essential oil yield	7	1.40	2.19 b	0.65	2.96
	1,8-cineole	7	38.21	50.09 a	10.24	66.13
	linalool	7	3.03	19.20 b	8.53	29.10
	camphor	7	6.71	14.07 a	8.11	29.96
2013	essential oil yield	7	2.86	4.05 a	1.24	6.19
	1,8-cineole	7	31.83	39.22 ab	6.14	47.99
	linalool	7	28.06	36.00 a	5.64	43.46
	camphor	7	5.23	10.61 a	4.55	18.41

n[a] Number of populations in which the component appear; Different letters indicate significant differences among years.

Table S5. EO yield (% on dry weight) and major components (in EO %) in 34 wild populations of *L. latifolia* Medik. For the Mediterranean Oroiberian (MO-18b) bioregion.

Year	Compound	n[a]	Minimum	Mean	S.D.	Maximum
2011	essential oil yield	8	2.32	3.79 a	1.15	5.78
	1,8-cineole	9	18.41	38.21 b	8.35	45.18
	linalool	8	0.23	21.28 a	18.24	42.71
	camphor	9	4.17	15.25 a	8.18	27.42
2012	essential oil yield	9	1.51	2.35 b	0.58	3.18
	1,8-cineole	9	39.74	50.44 a	9.46	62.77
	linalool	9	7.82	15.20 a	6.49	26.19
	camphor	9	4.94	15.91 a	6.62	27.89
2013	essential oil yield	9	2.49	4.70 a	1.32	6.80
	1,8-cineole	9	31.90	40.75 ab	7.57	55.03
	linalool	9	5.31	26.33 a	10.76	40.91
	camphor	9	3.60	14.68 a	8.11	31.38

n[a] Number of populations in which the component appear; Different letters indicate significant differences among years.

Table S6. Relationship between EO yield main components means of 34 populations of *L. latifolia* Medik. for three years based on the Pearson correlation matrix with standardized variables., by bioregions. With significance level $p < 0.05$ (*) and $p < 0.01$ (**).

		essential oil yield	1,8-cineole	linalool	camphor
C-4a	essential oil yield	1.000			
	1,8-cineole	-0.824**	1.000		
	linalool	0.492	-0.777*	1.000	
	camphor	0.610	-0.616	0.046	1.000
P-7a	essential oil yield	1.000			
	1,8-cineole	0.218	1.000		
	linalool	-0.213	-0.462	1.000	
	camphor	0.000	0.195	-0.451	1.000
MC-18a	essential oil yield	1.000			
	1,8-cineole	0.750	1.000		
	linalool	-0.405	-0.057	1.000	
	camphor	-0.187	-0.689	-0.585	1.000
MO-18b	essential oil yield	1.000			
	1,8-cineole	-0.448	1.000		
	linalool	0.288	-0.315	1.000	
	camphor	0.361	-0.522	-0.547	1.000

*. Correlation is significant at the 0.05 level; **. Correlation is significant at the 0.01 level.

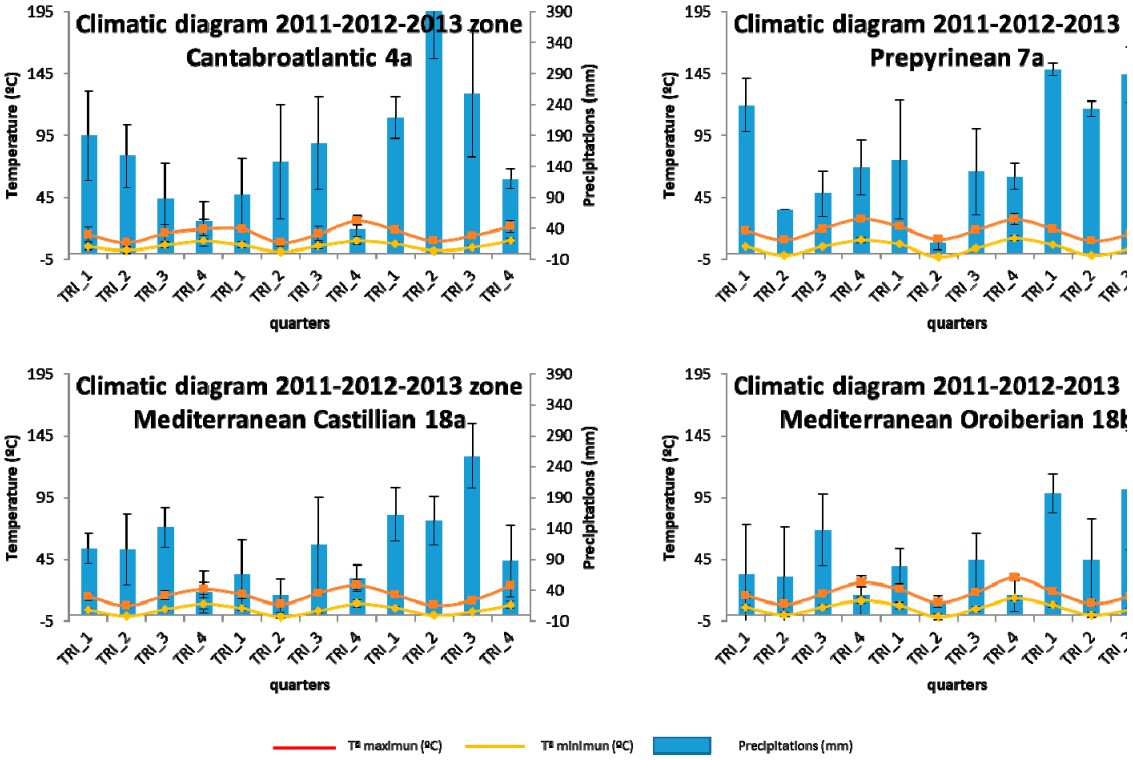

Figure S1. Gaussen's Climatic diagrams by year quarters in each bioregion.